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ABSTRACT

The course of study for students in upper secondary schools in Japan is outlined in this document. The first of three chapters puts forth the general provisions that a Japanese upper secondary school should seek to follow. Comprising the greater part of the volume, the second chapter outlines the objectives to be achieved in 18 subjects. For each of the 18 subjects (Japanese language, social studies, mathematics, science, health and physical education, art, foreign languages, home economics, agriculture, industry, business, fisheries, nursing, mathematical sciences, physical education, music, art, and English), an overall objective is listed followed by specific objectives and contents for each of the sub-sections that a subject may contain. For example, with lower level art education, each of the various sub-sections (music I, II, III; fine arts I, II, III; crafts production I, II, III; and calligraphy I, II, III) possess its own objectives and contents which are outlined. The third chapter is on special activities, listing objectives to be achieved in the homeroom, activities of students' councils, activities of clubs, and school events. An extract from the enforcement regulations of the school education law is included in an annex. (DB)

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COURSE OF STUDY FOR UPPER SECONDARY SCHOOLS IN JAPAN

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GOVERNMENT OF JAPAN
1988

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1983

PREFACE

The present Course of Study for Upper Secondary Schools was officially announced on 30 August, 1978 (Notification No.163 of the Ministry of Education, Science and Culture) and was put into effect on 1 April, 1982.

It is hoped that the English version of the Course of Study for Upper Secondary Schools will serve to introduce abroad the contents of upper secondary education in Japan. The translation has been prepared by the National Institute for Educational Research.

Educational and Cultural Exchange Division
Unesco and International Affairs Department
Science and International Affairs Bureau
Ministry of Education, Science and Culture

February, 1983

Course of Study for Upper Secondary Schools

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CHAPTER 1 GENERAL PROVISIONS

Section 1 General Guideline for Formulation of Curriculum

1. Each school should formulate a proper curriculum in compliance with the provisions of the laws and regulations concerned and those indicated in this and subsequent Chapters, in order to accomplish the well-balanced development of individual students as human beings, with full consideration for the realities of the school and its region, the characteristics of the courses and the abilities, aptitudes and future courses of students.

2. It should be a basic principle that moral education in school should be provided throughout all the educational activities of the school. Therefore, proper instruction for normal development should be given in each Subject under each Subject-area (hereinafter referred to as each Subject-area/Subject) and Special Activities in conformity with their respective characteristics.

The objectives of moral education are based on the fundamental purport of education laid down in the Fundamental Law of Education and the School Education Law. To be more concrete, moral education should aim at cultivating moral virtues as the essential foundation for educating Japanese citizens who are able to manifest the respect for human beings in everyday life at home, at school and in society, to endeavour for the creation of culture which is distinguished by national individuality and for the development of a democratic society and nation, and to contribute willingly to the cause of a peaceful international society.

In conducting moral education, consideration should be paid so that proper instruction be given not only to enhance the ability to practice morality but also to develop, in accordance with the level of mental and physical development of students, the spirit of self-determination and social solidarity, a deeper sense of responsibility, and the attitude to work for a better society which is free from discrimination.

3. For physical education in school, proper guidance should be given through all the educational activities of the school. In particular, for the improvement of physical strength and for the maintenance and promotion of good health and safety, adequate guidance should be given not only in the hours of Physical Education and Health but also in the hours of Special Activities and other educational activities. At the same time, the practice of appropriate physical exercises in daily life should be encouraged through such guidance.

4. In the school, proper guidance should be given, in conformity with the realities of the school and its region, to provide the stu-

dents with work experience so that students may appreciate the pleasure of working and creation, and develop a desirable view of work as well as occupation.

Section 2 Standard Number of Credits for Each Subject-area/Subject

1. The standard number of credits for each Subject-area/Subject should be the one under the column of the standard number of credits given below:

Subject-areas	Subjects	Standard Number of Credits
Japanese Language	Japanese Language I	4
	Japanese Language II	4
	Japanese Language Expression	2
	Contemporary Japanese Language	3
	Classics	4
Social Studies	Contemporary Society	4
	Japanese History	4
	World History	4
	Geography	4
	Ethics	2
	Politics and Economy	2
Mathematics	Mathematics I	4
	Mathematics II	3
	Algebra and Geometry	3
	Basic Analysis	3
	Differential and Integral Calculus	3
	Probability and Statistics	3
Science	Science I	4
	Science II	2
	Physics	4
	Chemistry	4
	Biology	4
	Earth Science	4
Health and Physical Education	Physical Education	7 - 9
	Health	2
Art	Music I	2
	Music II	2
	Music III	2
	Fine Arts I	2
	Fine Arts II	2
	Fine Arts III	2

Subject-areas	Subjects	Standard Number of Credits
Art	Crafts Production I	2
	Crafts Production II	2
	Crafts Production III	2
	Calligraphy I	2
	Calligraphy II	2
	Calligraphy III	2
Foreign Languages	English I	4
	English II	5
	English II A	3
	English II B	3
	English II C	3
Home Economics	General Home Economics	4

Remarks:

1) Thirty-five school hours of lessons per school year (one school hour is 50 minutes as a standard) should be counted as one credit. In case of the Correspondence Education Course, however, the provisions under Section 9 should be applied.

2) The individual school is allowed to increase the number of credits over the standard number of credits in cases where it is especially necessary in view of the realities pertaining to the students or others.

2. For each Subject-area/Subject listed in the Table below, the standard number of credits should be fixed by the respective establishers of schools.

Subject-areas	Subjects
Foreign Languages	German, French, Other Subjects concerning Foreign Languages
Home Economics	Clothing, Food, Child Rearing, Home Management and Housing, Clothes Making, Clothing Materials, Clothing Management, Accessory Design, Manual Arts, Cooking, Nutrition, Foodstuff, Foods Sanitation, Public Health, Principles and Techniques of Child Rearing, Children's Health, Child Psychology, Child Welfare, Other Subjects concerning Home Economics.

Subject areas	Subjects
Agriculture	Foundation of Agriculture, Comprehensive Practice, Crops, Vegetables, Animal Husbandry, Food Production, Surveying, Silviculture, Planning of Landscape Gardening, Environment for Cultivation of Crops, Agricultural Machinery, Agricultural Management, Sericulture, Fruit Trees, Flowering Plants, Livestock Nutrition and Feed, Farm Household Management, Food Chemistry, Applied Microorganisms, Food Production Machinery, Agricultural Civil Engineering Design, Materials and Execution of Works, Agricultural Irrigation, Farmland Development, Forestry Civil Engineering, Processing of Forestry Products, Forestry Management, Gardening Materials, Landscape Gardening Work Execution and Management, Comprehensive Agriculture, Other Subjects concerning Agriculture.
Industry	Foundation of Industry, Practice, Drawing, Mathematical Sciences in Technology, Machine Engineering and Construction, Machine Designing, Prime Movers, Measurement and Control, Machinery Materials, Automotive Engineering, Automobile Maintenance, Shipbuilding Engineering, Foundation of Electricity, Electrical Technology I, Electrical Technology II, Electronic Technology I, Electronic Technology II, Automatic Control, Information Technology I, Information Technology II, Information Technology III, Systems Technology, Industrial Measurement I, Industrial Measurement II, Architectural Structure, Execution of Architectural Works, Architectural Design, Architectural Planning, Equipment Installation, Air Conditioning Equipment, Plumbing and Disaster-Proof Equipment, Equipment and Facility Planning, Surveying, Civil Engineering Work, Civil Engineering Design, Hydraulics and Nature of Soil, Civil Engineering Planning, Geotechnology, Industrial Chemistry, Chemical Engineering, Equipment and Management, Safety in Chemical Industry, Chemical Industry, Environmental Technology I, Environmentary Technology II, Metal Smelting, Metal Materials, Metal Processing, Ceramic Technology I, Ceramic Technology II, Ceramics, Textiles and Textile Products, Textile Product Manufacturing, Textile and Dyeing De-

Subject-areas	Subjects
Industry	sign, Dyeing Chemistry, Interior Processing Interior Planning, Furniture Production, Lumber Craft, History of Design, Design Techniques, Design Materials, Industrial Management, Industrial English, Other Subjects concerning Industry.
Business	Business Economics I, Bookkeeping and Accounting I, Computation Practice, Information Processing I, Comprehensive Practice, Marketing, Goods, Bookkeeping and Accounting II, Industrial Bookkeeping, Documentary Work, Information Processing II, Business Economics II, Business Laws and Regulations, English for Trade Business, Commercial Design, Tax Accounting, Typewriting, Mathematics for Management, Other Subjects concerning Business.
Fisheries	General Fisheries, Ocean Practice, Comprehensive Practice, Fishing Industry, Navigation, Fishing Boats Operation, Fishery Laws and Regulations, Engines for Fishing Boats, Machinery Design and Engineering, Electric Machinery for Boats, Radio Communication, Telecommunication Theory, Radio Engineering, Outline of Boats, Fish Farming, Aquatic Organisms, Environment of Fishing Grounds, Steering of Boats, Fishery Products Processing, Fishery Food Chemistry, Fishery Food Sanitation, Fishery Product Processing Machinery, Other Subjects concerning Fishery.
Nursing	Basic Medical Science for Nursing, Fundamentals of Nursing, Nursing of Adult Patients, Nursing of Mother and Child, Clinical Practice in Nursing, Other Subjects concerning Nursing.
Mathematical Science	Mathematics in Mathematical Science, Integrated Mathematics, Science in Mathematical Science, Physics in Mathematical Science, Chemistry in Mathematical Science, Biology in Mathematical Science, Earth Science in Mathematical Science, Other Subjects concerning Mathematical Science.

Subject-areas	Subjects
Physical Education	Theory of Physical Education, Gymnastics, Sports I, Sports II, Sports III, Dance, Outdoor Activities, Other Subjects concerning Physical Education.
Music	Music Theory, History of Music, Solfeggio, Vocal Music, Instrumental Music, Composition, Other Subjects concerning Music.
Art	Outline of Fine Arts, History of Fine Arts, Drawing, Basic Modeling, Painting, Woodcut Printing, Sculpture, Visual Design, Craft Design, Projection and Drafting, Photographic Activity, Collective Modeling, Other Subjects concerning Art.
English	Comprehensive English, English Comprehension, English Expression, Foreign Affairs, General English, Language Laboratory Practice, Other Subjects concerning English.
Other Subject-areas Deemed Especially Necessary	Subjects concerning the Subject-areas concerned.

Remarks:

1) "Other Subjects" concerning the respective Subject-areas listed in the above Table (hereinafter referred to as other Subjects) should be given in case where it is difficult to formulate the curriculum of the school only with those Subject-areas/Subjects other than "Other Subjects" in the above Table because of the characteristics of the course or the realities of the school and its region. In this case, the establisher of the school could decide on the name, objectives, contents, required number of credits, etc. of that subject which is deemed necessary in consideration of the general objectives of the Subject-area under which that Subject falls.

2) "Other Subject-areas Deemed Especially Necessary" and "Subjects concerning the Subject-area concerned" listed in the above Table could only be given in such cases where a private school wants to offer religious education or where any school wants to offer such courses as theatrical art, photography, calligraphy, hotel management and tourism, or other courses primarily intended for specialized education, provided that such Subject-areas/Subjects are absolutely necessary to achieve the objectives of the respective

courses. In this case, it is the establisher of the school who should decide on the name, objectives, contents, required number of credits, etc. of the Subject-areas/Subjects in question.

Section 3 Study of Each Subject-area/Subject

1. Every student is required to take up the Subject-areas/Subjects listed below. The number of credits required for each of them should not be less than the prescribed standard number of credits. However, in cases where it is deemed extremely difficult to attain that level in view of the special nature of a given Subject-area/Subject and the realities of the students' ability, it is permissible to decrease the required number of credits partially. In such a case, adequate and selective guidance should be given with priority to basic and essential matters of that Subject-area/Subject, but in any case not to the extent that such a selective approach may affect the purport of the objectives of that Subject-area/Subject as prescribed in Chapter 2.

(1) "Japanese Language I", "Contemporary Society", "Mathematics I", "Science I", "Physical Education", and "Health".

(2) One of the following Subjects: "Music I", "Fine Arts I", "Crafts Production I", and "Calligraphy I".

2. In taking up the Subject-areas/Subjects in the General Education Course, the following points should be observed in addition to what is prescribed in Paragraph 1 above:

(1) For "Physical Education", the number of credits required of all male students in the Full-time Course should be fixed at not less than 11 credits.

(2) For Art, the number of credits required of all students should be fixed at not less than 3 credits.

(3) For "General Home Economics", all the female students should be required to take up this Subject and the required number of credits should not be less than 4.

3. In taking up the Subject-areas/Subjects in the Specialized Education Course, the following points should be observed in addition to what is described in Paragraph 1 above:

(1) As for the courses primarily intended for Specialized Education, the number of credits required of all the students for each Subject-area/Subject pertaining to specialized education should be fixed at not less than 30 credits. In case of the courses relating to Business, however, the above-mentioned number of credits may include the number

of credits for Subjects of Foreign Languages up to 10 credits. In the case of courses for specialized education other than the courses pertaining to Business, it is also permissible to include the number of credits for Subject-areas/Subjects for the General Education Course up to 5 credits in total, provided that the study of such Subject-areas/Subjects is expected to yield the same result as that of Subject-areas/Subjects for Specialised Education for the purpose of achieving the objectives of the above-mentioned courses.

(2) "General Home Economics" should be taken by all the female students and the required number of credits should be fixed at not less than 4. In case, however, where female students are extremely small in number, this provision may not apply.

(3) In cases where the completion of Subject-areas/Subjects for Specialized Education are expected to yield the same results as that of Subject-areas/Subjects required for all students as prescribed in Paragraph 1 above, the completion of the former Subject-areas/Subjects for Specialised Education may substitute part of whole of the number of credits required of all the students for the latter Subject-areas/Subjects.

Section 4 Study of Special Activities

1. Special activities consist of Homeroom Activities, Activities of Student's Council, Activities of Clubs and School Events.

2. In principle, more than one school hour per week (one school hour is 50 minutes as a standard) should be allocated to Homeroom Activities for each grade.

3. In principle, more than one school hour per week should be allocated to Activities of Clubs for each grade.

4. An adequate number of school hours should be allocated to Activities of Student's Council and School Events in accordance with the realities of the respective schools.

5. As for the Part-time Course, the number of school hours for Homeroom Activities and Activities of Clubs may be reduced in part if the special circumstances so require.

Section 5 Number of School Hours

1. The standard number of weeks for Subject-areas/Subjects, Homeroom Activities and Activities of Clubs in the Full-time Course should be 35 weeks per year.

2. The standard number of school hours per week for each grade of

the Full-time Course should be 32 school hours.

3. As for the Part-time Course, the seasonal allocation of the number of school days, or the weekly or daily allocation of school hours for each grade should be appropriately determined in consideration of the working conditions of the students and the local circumstances.

4. The standard number of school hours per credit for each Subject-area/Subject should be equivalent to 35 school hours for each school year.

Section 6 Matters to be Taken into Consideration in the Organization of Curriculum

1. For the purpose of providing proper education in accordance with the ability, aptitude, future course, interest, etc. of the students, it is permissible to offer different types of curriculum according to the need and to make the students select and pursue any of them by their free choice. In this case, Subject-areas/Subjects other than those to be pursued in a given type of curriculum should be offered for the students to complete, or Subject-areas/Subjects which the students may select and pursue by their free choice should be offered to the students.

2. For the General Education Course, provision should be made so that suitable Subject-areas/Subjects concerning vocations may be pursued by the students, if deemed necessary in consideration of the realities of the school and the region as well as the future courses, aptitudes, interests, etc. of the students. In this case, attention should be paid so as to increase the opportunities to learn through experience in working.

3. The following matters should be taken into consideration for a course primarily intended for vocational education:

(1) Proper curriculum should be formulated by selecting necessary Subject-areas/Subjects on a priority basis in accordance with the characteristics of the respective courses. The typical courses of those primarily intended for vocational education are listed in the Annexed Table, but the establisher of the school may offer such courses as listed in Remark 2) of the Table under the Secion 2-2., if deemed necessary.

(2) As for Subject-areas/Subjects concerning vocation, due consideration should be made so that an adequate number of school hours may be allocated for experiments and practice.

(3) If special consideration is deemed necessary in order to make it easier for students to pursue the Subject-areas/Subjects concerning vocations in view of their ability and other conditions, arrangements should be made to select

fundamental and core Subjects in each Subject-area on a priority basis and to enable the students to fully understand the basic and fundamental matters of their content, or to provide instruction largely consisting of experiments and practice.

Section 7 Matters to be Taken into Consideration in Preparation of the Teaching Programme

1. Each school should prepare a concrete teaching programme in a well-integrated and well-balanced way, reflecting the characteristics of the school, attempting interlinking among the Subject-areas/Subjects and Special Activities, and aiming at developmental and systematic guidance.

2. It is permissible for each school to include some matters in teaching in addition to those prescribed in Chapter 2 and the subsequent Chapter. In this case, care should be taken neither to deviate from the objectives and contents of the Subject-areas/Subjects or Special Activities as prescribed in Chapter 2 and the subsequent Chapter nor to impose an excessive burden upon the students.

3. Since the order of the matters listed as the Contents of each Subject-area/Subject in Chapter 2 does not imply the order of instruction, adequate measures should be taken into the grouping of matters and the establishment of the order of teaching and priority so that effective instruction may be given.

4. If deemed necessary, each school may provide instruction on a selective basis with emphasis on the basic and fundamental matters in teaching Subject-areas/Subjects prescribed in Chapter 2, as far as such instruction is not in conflict with the purport of the objectives of such Subject-areas or Subjects.

5. The following matters should be taken into consideration with regard to the Subject-areas/Subjects concerning vocations as prescribed in Chapter 2:

(1) As for Subject-areas/Subjects concerning vocations, the required number of school hours for practice may be substituted by practical experience in working. In this case such practical work experience must be directly related to the content of the Subject-areas/Subjects pursued and must be planned in advance as an integral part of the teaching programme. Furthermore, the number of school hours to be substituted should not exceed seven-tenths of the total number of school hours allotted for practice in the Subject-areas/Subjects.

(2) In the teaching of the Subject-areas/Subjects concerning Homeroom Economics, Agriculture and Fisheries, it is desir-

able to use home projects (practice at home) and the activities of the home economic club and the agriculture club in Special Activities for enhancing the effect of learning. In this case, not more than two-tenths of the total number of school hours for the Subject-areas/Subjects may be substituted by home project activities.

(3) As for the Part-time Course and the Correspondence Course, the actual work engaged in by the students may substitute for a part of the required number of school hours for Subject-areas/Subjects for vocations, in cases where the students are actually engaged in such work (including household work) closely related to the Subject-areas/Subjects and where the engagement in such work is considered to achieve similar results as would be by completing the study of a part of the Subject-area/ Subjects.

6. In addition to the above, the following points should be taken into consideration:

(1) Efforts should be made to provide a good environment for language improvement throughout the whole of school life so that the students may improve their ability to use language properly.

(2) Efforts should be made throughout all the educational activities of the school to properly identify and develop the ability and aptitude of every individual student, to help them in the selection of appropriate Subject-areas/ Subjects and a suitable type of course, and to provide the students with a planned and systematic guidance for their future.

(3) Attempts should be made to develop desirable human relations between teachers and students as well as among students so that student guidance may be enriched and strengthened.

(4) Plannned use of audio-visual aids and other teaching materials as well as the school library should be made.

(5) In the teaching of Subject-areas/Subjects, such arrangements as a flexible organization of classes, should be made in accordance with the degree of mastery of Subjects on the part of students.

(6) Necessary provision should be made for students who are slow in learning or who are mentally or physically handicapped in the selection of Subject-areas/Subjects and the teaching of subject matters, so that guidance may be pertinent to the realities of such students.

(7) The result of guidance and instruction should be constantly evaluated so that teaching may be improved.

Section 8 Acquisition of Credits and Certification of Graduation

1. Each school should certify the acquisition of the credits in the Subjects-areas/Subjects pursued by the students, in cases where the students have pursued these Subject-areas/Subjects in accordance with the teaching programme set forth by the school and their achievements are judged to be satisfactory in the light of the objectives of these Subject-areas/Subjects. In cases where one Subject is pursued over a period of two school years, yearly acquisition of credits in the Subject pursued should be certified respectively. Furthermore, in cases of special need, the acquisition of credits may be certified on a term basis.

2. Each school should prescribe the matters concerning the Subject-areas/Subjects to be pursued for graduation and their respective number of credits as well as the special activities to be pursued and the allotment of school hours for them. In this case, the total number of credits in the Subjects-areas/Subjects should not be less than 80 credits, inclusive of the number of credits set forth under Section 3.

3. Each school should prescribe the Subject-areas/Subjects to be pursued and the number of credits to be acquired for graduation. The school principal should certify the completion of the whole course of upper secondary school for the students who have acquired the required number of credits in the Subject-areas/Subjects and whose achievement in the Special Activities are judged to be satisfactory in the light of their objectives. In this case, the total number of credits to be acquired should not be less than 80 credits.

4. In cases where the students enrolled in the Part-time Course or the Correspondence Course have successfully passed the examination in such Subjects as prescribed in the Regulations concerning the Certification of the Eligibility for University Entrance (Ministry of Education Ordinance No.13 of 1951), the school may consider it equivalent to the acquisition of credits in the corresponding Subject-areas/Subjects of the upper secondary school.

5. In cases where students have acquired the credits in the subjects of the Special Course in a similar way as provided for in this Course of Study for Upper Secondary Schools, the school may consider it equivalent to the acquisition of the credits in the corresponding Subject-areas/Subjects of the upper secondary school.

Section 9 Special Treatment for Curriculum of the Correspondence Course

The curriculum of the Correspondence Course should be formulated not only in accordance with the provisions that are provided for in the preceding Sections 1 to 8 (excluding the provisions in 2, 3, 4 and 5 of Section 4, in Section 5, in 1 of Section 6, and 5-(2) of Section 7), but also in accordance with the following general provisions:

1. The frequency of corrections through correspondence and the number of school hours for the personal contact guidance (one school hour being 50 minutes as a standard) in the teaching of Subject-areas/Subjects should be as follows per credit:

Subject-areas/Subjects	Corrections (times)	Personal Contact (school hours)
Subjects concerning Japanese Language, Social Studies and Mathematics	3	1
Subjects concerning Science	3	4
"Physical Education" among the Subjects concerning Health and Physical Education	1	5
"Health" among the Subjects concerning Health and Physical Education	3	1
Subjects concerning Art	3	4
Subjects concerning Foreign Languages	3	4
Subject-areas/Subjects concerning Specialized Education	2 - 3 according to the needs of such Subject-areas/ Subjects	2 - 8 according to the needs of such Subject-areas/ Subjects

2. In cases where the students pursuing the Subject-areas/Subjects concerning vocations are engaged in such occupations (including household work) closely related to these Subject-areas/Subjects, and where their actual work in these occupations is deemed adequate to substitute for the practice in the Subject-areas/ Subjects in the light of the teaching programme prepared in advance by the school, these

students may be exempted from the personal contact guidance to an extent not exceeding three-tenths of the total required hours for personal contact in these Subject-areas/Subjects.

3. In cases where the school adopts, in the teaching programme of Subject-areas/Subjects or Special Activities, radio or television programmes which are offered on a planned and continued basis, and where the students listen to or watch these programmes and are recognized to have attained satisfactory results, these students may be exempted from the personal contact guidance in the Subject-areas/Subjects or Special Activities to an extent not exceeding six-tenths of the total required hours in respect of each radio or television programme, provided that such exemption should not exceed eight-tenths in total.

4. Guidance in Special Activities, including Homeroom and Activities of Clubs, should be offered in more than 40 school hours in total before the graduation of each student.

CHAPTER 2 SUBJECT-AREAS

Section 1 Japanese Language

SUB-SECTION 1 OVERALL OBJECTIVES

To make students acquire an ability to understand the Japanese language accurately and to express appropriately in the Japanese language, deepen their interest in linguistic culture, enrich their sense of language, and to develop an attitude of respecting and improving the Japanese language.

SUB-SECTION 2 SUBJECTS

I. JAPANESE LANGUAGE I

1. Objectives

To make students develop an ability to understand the Japanese language accurately and to express appropriately in the national language, deepen their interest in linguistic culture, enrich their sense of language, and to develop an attitude of respecting and improving the Japanese language.

2. Contents

A. Expression

Instruction should be given on the following:

a. To select proper words in expressing the object accurately, and to use them in conformity with the context.

b. To select a suitable topic and material in accordance with the purpose, and to arrange all the necessary materials.

c. To contrive a construction, and to express so as to clarify the theme and points of the argument.

d. To describe thoroughly paying attention to the distinction between fact and opinion and explanation and description.

e. To contrive a proper form and style in accordance with the purpose, and to improve the passage.

f. To read excellent writings and think about the conditions of a good writing, and to make use of them in one's own expressions.

g. To talk or declaim effectively in accordance with the purpose and situation.

B. Understanding

Instruction should be given on the following:

a. To comprehend accurately the subject and points of a speech or passage in accordance with the description.

b. To comprehend the writer's way of developing an idea and his points of emphasis, paying attention to the structure and development of the passage.

c. To summarize or explain in full detail the content of a speech or passage according to the need.

d. To read and appreciate the characters, scenes and sentiments described in accordance with its expressions.

e. To widen one's way of observing, feeling and thinking about things through reading, and to deepen one's idea about the human being, society, nature, etc.

f. To read, paying attention to the features of expression and the characteristics of styles suitable for the content and form of a passage.

g. To deepen the comprehension and appreciation of a passage by declamation.

Linguistic Items

Instruction should be given on the following in order to make use of them in the expression and comprehension of the Japanese language.

a. To understand the structure of a passage and sentence, the function of words, and the ways of description in the Japanese language.

b. To understand the rules of literary language and of reading Chinese classics as the Japanese language.

c. To understand the meaning and usage of words, and to enrich one's vocabulary.

d. To be accustomed to read Chinese characters designated for daily use, and to be able to write most of them.

e. To understand the role of language, characteristics of the Japanese language, etc.

3. Points for Special Consideration in Teaching

1) In regard to the treatment of Contents, appropriate learning activities in accordance with the student's stage of development should be organized and effective instruction should be ensured in close relation with A., B. and the Linguistic Items stated above. In doing so, consideration should be given to the following:

a. In the Contents A., one credit may be given to the study of composition, so as to develop the students' ability to compose as much as possible.

b. In the Contents B., the proportion of the number of school hours alloted for the learning of the classics and of the literary works written in modern ages should be properly set, almost in equal as a criterion, in accordance with the students' realities. Further, the proportion of school hours between the Japanese classics and the Chinese classics should be impartial.

2) Consideration should be given to the following in regard to the teaching of the Contents B.

a. The teaching materials should be selected appropriately from classics and writings in modern ages in accordance with the students' stage of development, so as to develop their ability of reading books by reading study.

b. Opportunities for writing activities should be provided as much as possible in the comprehension and appreciation activities, so as to make them useful for the development of the student's ability of expression and comprehension.

3) Consideration should be given to the following in regard to the teaching of the Linguistic Items.

a. On the basis of instruction given in the lower secondary school, instruction on the Linguistic Items should be given in the course of instruction of the Contents A. and B.

b. The instruction on the rules of literary language and of reading Chinese classics as the Japanese language should be given in accordance with the comprehension

of a writing.

II. JAPANESE LANGUAGE II

1. Objectives

To make students enhance an ability to understand the Japanese language accurately and to express appropriately in the Japanese language, deepen their interest in linguistic culture, enrich their sense of language, and to develop an attitude of respecting and improving the Japanese language.

2. Contents

In accordance with the objectives stated above, instruction should be given to the items listed in the Contents of the "Japanese Language I".

3. Points for Special Consideration in Teaching

In regard to the treatment of Contents, appropriate learning activities should be organized in accordance with the student's stage of development and effective instruction should be ensured, in order to develop further the proficiency in the Contents of the "Japanese Language I" and to enhance further the total ability of the Japanese language, in close relation with A., B. and Linguistic Items. In doing so, consideration should be given to the items of "3. Remarks about the Contents" in the "Japanese Language I".

III. JAPANESE LANGUAGE EXPRESSION

1. Objectives

To make students enhance an ability to express appropriately and effectively in the Japanese language, an ability of thinking, and also to develop an attitude of enriching their life through their positive expressions.

2. Contents

Instruction should be given on the following:

a. To take up a proper topic and material for talk, to deepen one's idea on them, and to clarify the theme and argument.

b. In accordance with observation and survey, to explain accurately the facts, situations, etc. and to summarize them in a record or report.

c. To arrange materials according to the plan, to make public one's opinions and contentions, and to describe them in a sequence.

d. To grasp the object accurately and, devising the ways of describing it, to express so that one's impressions and emotions are vividly conveyed.

e. To write correspondence and messages, using a form and a style appropriate to the receivers and the purpose.

f. To examine the theme, main point, structure and rhetoric of excellent passages, and to make use of them in one's own expression and elaboration.

3. Points for Special Consideration in Teaching

1) Instruction on composition and speaking should be given effectively, ensuring their mutual relevance, and the suitable number of school hours should be alloted for speaking in accordance with the student's realities.

2) From the viewpoint of developing the student's ability in writing, many opportunities of writing passages should be given and study on passages should be utilized fully.

IV. CONTEMPORARY JAPANESE LANGUAGE

1. Objectives

To make students enhance an ability to comprehend and appreciate excellent passages and works written in modern ages, deepen their ways of observing, feeling and thinking about things, and to develop an attitude of enriching their life by positively reading books.

2. Contents

Instruction should be given on the following:

a. To think about the relation between main and secondary points of the logical passage and to grasp accurately the logical development and the main point.

b. To examine the theme, structure and description of the literary writing, and to grasp accurately the characters, scenes, sentiments, etc.

c. To deepen and develop one's thought about the human being, society, nature, etc. through the comprenhen-

sion and appreciation of writings and works.

d. To grasp the features of expression, in consideration of the relations of a style, rhetoric, etc. with the content.

e. To understand accurately the meaning and usage of phrases, and to enrich one's vocabulary.

f. To deepen the comprehension and appreciation of a passage through various ways of reading in accordance with the purpose and the content.

3. Points for Special Consideration in Teaching

1) The teaching materials should be selected from writings and works written in the modern ages which are of certain amount as a rule. In addition, consideration should be given to include works of written language in the modern ages and of translation.

2) The instruction on the changes in writings and literature of the modern ages should be limited to the extent that they can serve as a guide for the comprehension and appreciation of the works.

3) Opportunities to report in a written form or to discuss what has been investigated, utilizing properly reference documents should be provided adequately.

V. CLASSICS

1. Objectives

To make students enhance an ability to comprehend and appreciate the Japanese and Chinese ancient writings as classics, deepen their ways of observing, feeling and thinking about things, and to develop an attitude of enriching their life by being fond of the classics.

2. Contents

Instruction should be given on the following:

a. To understand the meanings and usage of words, and the structure of sentences used in the Japanese and Chinese classics.

b. To grasp accurately the theme and the main point in accordance with the structure and development of a passage.

c. To understand the thoughts and sentiments embodied in a work, and to deepen one's ways of observing, feeling and thinking about things.

d. To understand the features of expression in a passage, and to appreciate excellent expressions.

e. To deepen the comprehension and appreciation of works by declamation.

f. To think about the characteristics of the Japanese culture and its relation to the Chinese culture through reading of classics.

3. Points for Special Consideration in Teaching

1) In regard to the treatment of Contents, both Japanese and Chinese classics should be taught in a well-balanced way.

2) Teaching materials should be of a certain amount as a rule.

3) Consideration on the teaching materials should be given to the ways of description and proper use of the explanatory notes and remarks. Particularly the Chinese classics need to make them understandable by the use of auxiliary reading marks.

4) Through the comprehension and appreciation of works, the relations of classics with the age, society, culture, etc. should be understood.

5) Instruction on the grammar of literary language should be given along with the comprehension of works, and in case necessary intensive instruction on the grammar can be given.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. Consideration should be given to the following in preparing the teaching programme.

1) "Japanese Language I" is to be studied in Grade 1 as a general rule, and it is desirable to make all the students study "Japanese Language II" following "Japanese Language I".

2) Proper learning activities in accordance with the achieve-

ment level of the students and effective instruction should be ensured in close relation with each Subject.

2. Consideration should be given to the following in teaching the Contents.

   1) Appropriate teaching materials should be selected with thorough consideration to the student's degree of understanding, their interest and concern, and necessity in the present and the future.

   2) Effectiveness of instruction should be enhanced by encouraging frequent use of dictionary and reference materials, with proper use of audio teaching materials.

Section 2 Social Studies

SUB-SECTION 1 OBJECTIVES

To make students deepen their understanding and awareness of society and human beings from a broad perspective, and to develop their qualities necessary as citizens which are essential for competent builders of a democratic and peaceful nation and society.

SUB-SECTION 2 SUBJECTS

I. CONTEMPORARY SOCIETY

1. Objectives

To make students, on the basis of respect for human beings and scientific inquiry, deepen their understanding of basic problems concerning society and human beings, develop a basis of judgement for contemporary society and an ability to think out a way of life as human beings by themselves using a wider perspective, and also develop an attitude of striving for the improvement of human life and willingly contributing to the advancement of the nation and society.

2. Contents

1) Basic problems of the contemporary society.

The present age and human beings

Formation of the contemporary society, and human life

Human beings and environment

Population problems and resources and energy

Economic society and national welfare of the present age

Development of science and technology, and economic life of the present age

(enlargement of production and modern enterprises, price mechanism and role of the government, economic system, etc.)

Characteristics and internationalization of Japanese economy

(trends in the national income, business fluctuations, general trends in the balance of payments, etc.)

Harmonious economic development and realization of

welfare

(protection of consumers and responsibility of enterprises, respect for human beings and the prevention of pollution, improvement of working conditions and relations, social security and realization of a welfare society, etc.)

Democracy of the present age and international society

Basic principles of the Consitution of Japan and the life of people

(guarantee of the fundamental human rights and the rule of law, pacifism and the security of our nation, people's sovereignty and parliamentary democracy, etc.)

Modern state and democracy

(state and individuals, local self-government and people's welfare, public opinion and present politics, main political systems in the world, etc.)

International peace and welfare of human beings

(characteristics of international law and international politics, the United Nations and collective security, nuclear weapons and disarmament, welfare of human beings and the role of Japan, etc.)

2) Contemporary society and ways of human life.

Culture in human life

Cultures in the various areas of the world and cultural exchange

Japanese life culture and tradition

Today's culture

Youth and self-evaluation

Phychological and social problems of the youth in the present age

Adaptation and the formation of personality

Ethics existing in the present age

Significance of thinking for pursuit of truth

(significance of learning, philosophical way of

thinking and scientific way of thinking, etc.)

To live a good life and the pursuit of a life worth living

(ethical value and personality, the significance of religion in life, art and life, occupation and leisure, etc.)

Ethics in democratic society

(respect for human life, freedom and right, responsibility and duty, human dignity and equality, etc.)

3. Points for Special Consideration in Teaching

1) In teaching the Contents, realizing the fact that all social phenomena are related with one another and are tied to society and man, instruction should be given to make the students understand and think from a comprehensive viewpoint to the best of their ability.

2) In the preparation of a teaching programme, it is possible to develop concrete teaching items of the Contents and learning methods, but in doing so, it is necessary to be impartial in dealing with the Contents 1) and 2).

3) In teaching the Contents, consideration should be given to avoid unnecessary involvement in specially advanced and abstract contents, and it is necessary to have students understand the basic meaning of items and have them learn the viewpoints and way of thinking around them.

4) As for the items concerning politics and religion, specially careful consideration should be given to ensure proper instruction in conformity with the provisions stipulated under Articles 8 and 9 of the Fundamental Law of Education.

II. JAPANESE HISTORY

1. Objectives

To make students cultivate the ability of historical way of thinking through study on the formation and the development of culture in the history of Japan from a broad perspective, and also understand the historical process leading to the formation of modern Japan and the features of her own culture, thereby deepening their consciousness as a nation.

2. Contents

1) Dawn of Japanese culture.

Dawn of human culture in the Japanese archipelago

Beginning of rice crop farming and the development of social life

2) Adoption of the continental culture and the nationalization of culture.

Influences of the East Asian culture and the formation of the nation

Adoption of the Tang culture and the Sui culture, and establishment of the Statute System

Development of national culture and local movements

3) Formation of *Buke* (warriors' class) culture and emergence of the culture of the common people.

Establishment of *Buke* society and a new trend in the culture

Transition taken place in the *Buke* and *Kuge* (court nobles) relation, and the development of *Buke* culture

Society of the lower class dominating the upper class, and the culture of the common people.

4) Cultural trends under the shogunate-clan system.

Contact with the European culture and isolation of the country

Shogunate-clan system and the development of feudalistic thought

Development of merchant culture, and the life and culture of farm villages

Unrest in the feudalistic society and the development of new thought

5) Formation and growth of modern culture.

Introduction of the Western culture and the *Meiji* Restoration

Formation of the modern nation and political thought

Development of capitalism and people's life

Japan's modernization and Asia

Domestic and foreign affairs and the trends of thought in the period between World War I and World War II.

6) Contemporary society and creation of culture.

Reforms after World War II and changes in the people's life

Contemporary world and Japanese culture

7) History and culture of community.

3. Points for Special Consideration in Teaching

1) In the process of instruction, it is necessary to make the students become aware of the overall relationship between culture and the historical background which produced it, the contact with foreign culture, and the modification process taken place in traditional culture through cultural exchange, thereby having them comprehensively consider the characteristics of the particular culture in each period and the various factors that led to their formation.

In this case, and also in dealing with the political, economic and social affairs, attention should be paid to the basic nature of "Japanese History", namely, the comprehensive study of culture, and emphasis should be also laid on their connection with cultural phenomena. In doing so, it is necessary to avoid to deal with detailed matters and highly sophisticated items.

In addition, in taking up the life culture, it is desirable to make the students grasp its concrete aspects by making use of the findings of folklore, etc.

2) As for the instruction of modern and contemporary history, it is necessary to make students gain an understanding of the historical facts based on objective and impartial data.

In doing so, it is necessary to make students recognize the threat of nuclear weapons and the importance of the prevention of war and the realization of a democratic and peaceful international society.

3) In teaching 'history and culture of community' of the Contents 7), attention should be paid to the following points:

a. The range of each community, such as an area of daily life centering around the school, prefectures or a region covering them, etc., should be set appropriately in accordance with the viewpoints of instruction.

b. Effective methods of teaching should be taken in a flexible way in relation to the instruction on 1) to 6) of the Contents, on the basis of the instructional viewpoints and the features of the community.

c. As to the study of historical phenomena of a community, it is necessary to make students become aware of their connection with the various conditions governing the community.

d. By taking up cultural inheritances such as historical spots and other remains, relics, customs, oral tradition, etc., the students' understanding and their attitudes of respecting them should be fostered.

4) In order to further deepen the students' ability in historical consideration, suitable themes for instruction should be taken up in the course of the study of historical issues. In doing so, consideration should be given to the following points:

a. The themes may be selected, for instance, from the following:

a) Those themes in which main individuals who contributed to the development of Japanese culture and their roles can be studied in connection with the historical background they lived.

b. Those themes through which unique features of each Japanese region in the development of history and their changes in accordance with the times can be thought and studied.

c) Those themes through which the development of life culture such as clothing, food and housing, annual events, the ceremonies of coming of age, marriage, funeral and ancestral worship, production instruments, etc. can be studied in connection with the society.

b. As for the assignment of themes, consideration should

be given to take up those with different viewpoints as much as possible and not to be partial to particular periods or regions.

III. WORLD HISTORY

1. Objectives

To have students understand the basic facts concerning world history, thereby developing the ability of an historical way of thinking, and to make them grasp the historical process in the formation of the modern world and characteristics of each cultural zone in world history, and cultivate the development of the temperament to live in an international society as Japanese.

2. Contents

1) Origins of civilization.

Formation of the Oriental Civilization, and the Iranian Civilization

Formation of the Mediterranean Civilization

Formation of the Indian Civilization

Formation of the Chinese Civilization

2) Formation and development of the East Asian cultural zone.

Activities of nomads and Chinese society and its culture

Changes in Chinese society and its culture, and development of its neighbouring folks.

Prosperity of the Chinese Empire

3) Formation and development of the West Asian cultural zone.

Formation of Islamic World

India and South-East Asia and expansion of the Islamic World

Islamic culture and cultural exchanges between the East and the West

4) Formation and development of the European cultural zone.

Formation of European society and its culture

Changes in European society and its culture

Formation of national states and international relations

5) World in the 19th century.

Formation of the European civil society and its culture

Development of the Industrial Revolution and Asia

Various revolutions in Europe and the American Continent

Imperialism relating Asia and Africa

6) World between the two World Wars.

World War I and formation of USSR

Europe after World War I and racial movements in Asia and Africa

Trends of USA and the World Depression

Rising of totalitarianism and World War II

7) Modern World and Japan.

International society after World War II

Changes in international situations and Japan

Development of science and technology and modern human culture

3. Points for Special Consideration in Teaching

1) In teaching the contents, consideration should be given to the following:

a. As for the Contents 1), instruction should be given to make students understand that human beings have built up their civilization under the given natural environments of each area, and it should also deal with the formation of the foundation of each Cultural Zone.

b. As for the instruction of the Contents 2), 3) and 4), the following points should be taken into consideration:

a) To deal with the climate and people of each Cultural Zone in order to make students understand the peoples' life styles in concrete terms, and not to follow only the political trends in the instruction.

b) To make students understand the historical development and features of each Cultural Zone, and make them aware of the homogeneity within each Cultural Zone.

c) As for the way of grouping each Cultural Zone, the relation with "Geography" should be considered and attempts should also be made, for instance, to pick up India and the South-East Asia as an independent cultural zone, etc.

c. As for the Contents 5), 6) and 7), the following points should be taken into consideration:

a) To make students pay attention to the world trends in general, understand how the world is moving toward unification, and think of historical significance in the formation of the modern world.

b) To make students know the situation of Japan, Asia, Africa, Latin America, etc. in the world, and consider their trends. At the same time, special attention should be paid to the events and matters deeply connected with Japan.

c) As for the Contents 6) and 7), it is necessary to make students understand the historical facts based on the objective and correct data.

d) As for the Contents 7), problems which human beings face at present should be taken up in the course of learning keeping the close relationship with other Subjects.

In this case, instruction should be given to make students pay attention to the threat of nuclear weapons, and realize the importance of prevention of wars, and the importance of realization of a democratic and peaceful international society.

2) In order to deepen further the historical thinking in students, proper themes should be taken up in the learning of historical issues. In this case, the following points should be considered:

a. After examining students' interest, level of understanding and effect of teaching materials, appropriate themes should be selected, for instance, keeping the following points in mind:

a) Themes which enable students to make comparative studies of each area or the learning of relationship between areas.

b) Themes which enable students to make studies of different periods, areas and nations as broad categories for learning.

c) Themes which enable students to study about society and culture of various areas in the modern world by making effective use of the findings of cultural anthropology, etc.

d) Themes which enable students to locate Japan in the world history by comparing and interrelating the historical events of the world with those of Japan.

e) Themes which enable students to learn historical figures in the world history in connection with the background of their periods and the features of their areas.

b. As for the assignment of themes, consideration should be given to take up as many as possible those with different viewpoints and not to be partial to particular periods or areas.

VI. GEOGRAPHY

1. Objectives

To make students understand regional features of people's life styles in the world, and their trends in connection with natural and social environments of each area, cultivate the geographical recognition toward the present-day world, and think of the position and the role of Japan in the international society.

2. Contents

1) Human beings and the earth.

a. Various groups of people and their lives

b. Nature as an arena of life

c. Natural environment and social environment

d. Use of maps

2) Population, natural resources and industries.

a. Regional characteristics of population

Distribution of population and its increase and decrease

Structure of population

b. Production and consumption of food

Regional characteristics of agriculture and stock-farming

Fishery and fishing grounds

Regional characteristics of demand and supply of food

c. Energy resources and material resources

Development, demand and supply of energy resources

Development, demand and supply of mineral resources

Distribution and use of forestry resources

d. Industrialization and industrialized areas

Significance of industrialization

Location of industry and industrial areas

e. Regional development and preservation of the environment

3) Life and region.

a. Regional survey

b. Villages and cities

Formation and function of villages

Function of cities and urban areas

Urbanization and problems in cities

c. Countries and peoples

Territory and boundary of nations

Nations and their racial composition

d. Various areas in the world

Classification of regions in the world

Characteristics of regions in the world

4) The world and Japan.

a. Integration of the world

Transportation and communications in the world

Trade in the world

Integration among nations

b. Japan in the world

3. Points for Special Consideration in Teaching

1) In teaching the Contents 1), consideration should be given to the following:

a. As for'a. Various groups of people and their lives', instruction should be given to make students pay attention to various life styles of main groups of people in each area of the world such as food, clothing, housing, religious customs so that students can notice the variety of life styles in various geographical environments.

b. As for 'b. Nature as an arena of life', instruction should be given to make students understand the natural environment such as geographical features of the world, topography, climate, vegetation, etc. in relation with human affairs.

2) In teaching the Contents 2), consideration should be given to the following:

a. As for 'a. Regional characteristics of population', it should be taught as a basis for the learning of each item under the Contents b. to e.

b. With regard to items from b. to e., as many concrete areas as possible should be taken up as examples.

3) In teaching the Contents 3), consideration should be given to the following:

a. Instruction should be given to make the students pay

attention to the fact that people's lives are closely related to their regions, and study this fact by moving from study on the microscopic scale to the macroscopic scale.

b. As for 'a. Regional survey', specific hours for field work should be included in the teaching programme and put it into practice.

c. As for the Contents 'b. Urbanization and problems in cities', instruction should be given to make the students pay attention to the mutual relationship between cities and villages, big cities and medium-sized or small-sized cities.

d. As for the Contents 'd. Classification of regions in the world', instruction should be given to make the students pay attention to various ways of divisions based on indexes such as natural, political, economic, cultural ones, and to have them understand the concept of the regions and the meaning of classification of regions by comparing and contrasting them.

e. As for the Contents 'd. Characteristics of regions in the world', several areas in the world are to be picked up as examples, and instruction should be given to make the students grasp the characteristics of such regions in a comprehensive way, so that the students can understand the method of surveying the situation of the region from a wider point of view. In this case, the content taken up in each region should be organized in view of the items described in the Contents 1), 2), and b. and c. under 3).

4) Throughout the instruction of the Contents, Japan should be taken up as much as possible in the teaching of each item, and attention should be paid so that students could learn each item by comparing and relating Japan to the world.

V. ETHICS

1. Objectives

To make students, on the basis of the spirit of respect for human beings, deepen their understanding of and think about existence and the value of human beings, and cultivate a practical attitude to develop their independent characters.

2. Contents

1) Self-awareness as human beings.

Self-evaluation and related sources of thought

Basic ideas about Greek thought, Christianity, Buddhism, and Confucianism, and the significance of awareness as human beings.

Thought existing in the present age

Historical formation of thought such as respect for human beings, rational mind, ethics in the democratic society, and the significance of such thought existing in the present age.

2) Japanese thought.

Thought and climate

Views toward man and nature recognized by the Japanese people and the Japanese climate.

Thought and tradition

Absorption of foreign thought and the Japanese tradition for the formation of original thought.

3) Contemporary society and ethics.

Tasks of thought in the contemporary world

Common and basic tasks seen in the main thought in the contemporary world.

Contemplation and ethical awareness

Tasks of self-formation as a man living in the contemporary society.

3. Points for Special Consideration in Teaching

1) In teaching the Contents, consideration should be given to deepen and develop students' studies in connection with "Contemporary Society", maintain coherence of the content as a whole and not to be partial to particular in dealing with the Contents.

2) In teaching the Contents, special attention should be paid not to take up history of thought exhaustively or sophisticated themes in detail dealing with ideas of wise men of the past, and to enable the students to establish their own views toward life and the world.

3) As for the method of instruction, it is necessary, for

instance, to contrive items concentrating on basic ideas of wise men of the past, historical development of thought, the ethical content of "Contemporary Society", a part of books or words and deeds of the wise man of the past, etc.

4) As for the items concerning politics and religion, specially careful consideration should be given to ensure proper instruction in conformity with the provisions stipulated under Articles 8 and 9 of the Fundamental Law of Education.

VI. POLITICS AND ECONOMY

1. Objectives

To make students deepen their understanding of the essence of democracy and gain objective understanding of the problems concerning the present-day politics, economy and international relations of Japan, thereby building a foundation of knowledge necessary for citizens with sound judgement.

2. Contents

1) Constitution of Japan and democrary.

Basic characteristics of the Constitution of Japan

Basic principles of democracy and basic characteristics of the Constitution of Japan, etc.

Guarantee of fundamental human rights

Fundamental rights of liberty and fundamental rights to life, fundamental human rights and public welfare, etc.

Political structure and political administration

Structures and function of the Diet, Cabinet, courts, and local self-government, etc.

Tasks of the present politics

Characteristics and situations of the present politics, political consciousness of the nation, ways of political participation, etc.

2) Japanese economy and national welfare.

Characteristics and function of present economy

Changes in economic society, markets and enterprises of the present day, etc.

Structures of national economy and economic growth

National wealth and national income, stabilization and growth of economy, roles of monetary system and finance, etc.

International economy and international co-operation

Trends in international economy, changes in economic systems, the role of Japan and the direction taking place in the development in the international economy, etc.

Present state of Japanese economy and national welfare

Industrial structures of Japan and problems of the Japanese economy, basic problems concerning improvement of the people's life and realization of welfare, especially development of science and technology, use of resources and energy, prevention of pollution, improvement of labour relations, protection of consumers, promotion of the social security system, etc.

3) International society and Japan.

International relations and states

Basic factors in international relations, significance of international laws and characterisitcs of international politics, the United Nations and international co-operation, etc.

International peace and welfare of human beings

Trends in international politics after World War II, the position and role of Japan dedicated to international peace and welfare of human beings, etc.

3. Points for Special Consideration in Teaching

1) In teaching the Contents, consideration should be given to deepen and develop students' studies in connection with "Contemporary Society", maintain coherence of the content as a whole, and not to be partial in dealing with the Contents.

2) In dealing with the Contents, it is necessary to be careful not to teach only aspects of structures and systems of politics and economy, and to make students understand the content concretely in connection with the objective data and deepen their viewpoints and ways of thinking of politics and economy.

3) In the instruction for facilitating the students' understanding of the present state and problems, it is necessary to make students understand the interrelation between theory and actualities, on the basis of their understanding of legal and organizational aspects of present Japan.

4) As for the items concerning the present problems and current phenomena related to the Contents, specially careful consideration should be given to ensure proper instruction in conformity with the provisions under Article 8 of the Fundamental Law of Education.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. Students should be required to study "Contemporary Society" in Grade 1 as a rule, and to study "Japanese History", "World History", "Geography", "Ethics", and "Politics and Economy" in the subsequent Grades as electives as a rule after studying "Contemporary Society".

2. Throughout the entire instruction, it is necessary to improve the students' learning efficiency by giving them various activities such as reading and making of maps and chronological tables, making the students familiar with and enabling them to use various statistical data, yearbooks, whitepapers, newspapers, reading materials and other data, reporting of what they have observed, visited and studied, and summarizing them in written reports, etc.

Section 3 Mathematics

SUB-SECTION 1 OVERALL OBJECTIVES

To help students deepen their understanding of the basic concepts, principles and laws of mathematics, and develop their abilities to think and process mathematically when dealing with various phenomena on the basis of mathematical thinking of systematic nature, thereby fostering attitudes which encourage the use of such abilities.

SUB-SECTION 2 SUBJECTS

I. MATHEMATICS I

1. Objectives

To help students deepen their understanding of numbers, algebraic expressions, functions and geometrical figures, and encourage mastery of basic knowledge and skills, thereby increasing their abilities to use them correctly in the consideration of various phenomena.

2. Contents

1) Numbers and algebraic expressions.

a. Numbers

a) numbers and sets

b) integers, rational numbers, real numbers

b. Algebraic expressions

a) integral expressions

b) rational expressions

2) Equations and inequalities.

a. Equations

a) quadratic equations

b) simple equations of higher degree

c) simultaneous equations

b. Quadratic inequalities

c. Algebraic expressions and proof

Terms and Symbols: discriminant, imaginary number, i, complex number

3) Functions.

a. Quadratic functions

b. Simple rational functions and irrational functions

Terms and Symbols: inverse function

4) Geometrical figures.

a. Trigonometric ratios

a) sine, cosine, tangent

b) sine theorem, cosine theorem

b. Plane figures and equations

a) points and coordinates

b) equations of straight lines

c) equations of circles

Terms and Symbols: sin, cos, tan

3. Points for Special Consideration in Teaching

1) In the Contents 1)-a.-a), the fundamental facts of sets should be included.

2) In the Contents 1)-b, the index should be extended to include zero and negative integers.

3) In the Contents 2)-a.-b), use of the factor theorem should be limited to solving third and fourth degree equations with simple numerical coefficients.

4) The Contents 2)-a.-c) should be limited to simultaneous equations with two variables of first and second degree.

5) In the Contents 2)-c, necessary conditions, sufficient conditions and contraposition, etc. should be included.

6) In the Contents 3)-b, functions such as $y=\frac{ax+b}{cx+d}$, $y=\sqrt{ax+b}$ should be included.

7) In the Contents 4)-b, in simple cases the regions represented by inequalities should be included.

II. MATHEMATICS II

1. Objectives

To help students understand fundamental concepts, principles and laws in broader fields of mathematics which follow the contents studied in Mathematics I, thereby deepening their appreciation of the role played by mathematics in society.

2. Contents

1) Probability and statistics.

a. Permutation and combination

b. Probability

c. Statistics

Terms and Symbols: ${}_nP_r$, ${}_nC_r$, factorial, $n!$, complementary event, expectation, standard deviation.

2) Vectors.

a. Vectors and their operations

b. Application of vectors

3) Differentiation and integration.

a. Meaning of differential coefficient

b. Derivatives and their application

c. Meaning of integration

Terms and Symbols: limit value, lim, indefinite integral, definite integral.

4) Series.

a. Arithmetic series

b. Geometric series

5) Various functions.

a. Exponential function

b. Logarithmic function

c. Trigonometric function

Terms and Symbols: power root, $\log_a x$, , generalized angle.

6) Computer and flow charts.

a. Functions of electronic computers

b. Algorithms and flow charts

3. Points for Special Consideration in Teaching

1) The Contents of 1) to 5) above are composed of the basic elements which will be elaborated in "III. Algebra and Geometry", "IV. Basic Analysis," and "VI. Probability and Statistics." The teacher should refer to the items "2. Contents" and "3. Remarks about the Contents" for each of these Subjects in order to gain a clearer understanding for instruction.

2) In the teaching of Mathematics II, suitable contents should be selected from among 1) to 6) listed above as the contents based on the student's realities and the numbers of credits assigned to this Subject.

3) In the teaching of 6) under the Contents, actual experience of preparing programmes for computers, running them and analyzing the result should be included in accordance with the capacity of the available computer.

III. ALGEBRA and GEOMETRY

1. Objectives

To help students understand vectors and matrices, and foster their abilities to use such knowledge. Also to enhance the capacity for using coordinates and vectors, thereby deepening their understanding of conics and space figures.

2. Contents

1) Conics curves of secondary degree.

a. Parabola.

b. Ellipse and hyperbola

2) Vectors on the plane.

a. Vectors and their operations

b. Inner product of vectors

c. Application of vectors

equations of straight lines and circles, etc.

3) Matrices.

a. Matrices and their operations

b. Inverse matrix

c. Linear transformation and mapping

Terms and Symbols: A^{-1}

4) Space figures.

a. Points, straight lines and planes in space

b. Coordinates in space

c. Vectors in space

including equations of straight lines, planes and spheres

3. Points for Special Consideration in Teaching

1) In the instruction of 1) above, equations of standard curves of secondary degree may be taught only to the extent of dealing with their rough sketches of graphs and the focal point.

2) As for the Contents 3)-a., matrix multiplication should include matrices up to 2 x 2.

3) The Contents 4)-a. should mainly deal with the relations between each position in parallelism and perpendicularity, and the theorem of three perpendiculars.

IV. BASIC ANALYSIS

1. Objectives

To help students understand series, exponential functions, logarithmic functions and trigonometric functions as well as the basic concepts and ideas of differential and integral calculus, thereby strengthening their abilities to use such knowledge within the range of simple integral functions.

2. Contents

1) Series.

a. Simple series

arithmetic series, geometric series, etc.

b. Mathematical induction

Terms and Symbols: Σ

2) Functions.

a. Exponential function

b. Logarithmic function

c. Trigonometric function

a) generalized angle and circular measure method.

b) trigonometric functions and their periodicity.

c) addition theorems for trigonometric functions.

Terms and Symbols: power root, $\log_a x$

3) Variation of functional values.

a. Meaning of differential coefficients.

b. Derivatives and their application

a) derivatives of sums, differences and products with real numbers of functions.

b) tangent, increase and decrease of functional values, velocity, etc.

c. Integrations and their application.

indefinite integral, definite integral, area, etc.

Terms and Symbols: limit value, lim

3. Points for Special Consideration in Teaching

1) As for the Contents 1)-a., it should be limited to the teaching of the sum of arithmetic series, the sum of geometric series and the sum of series 1^2 .

2) In teaching the Contents 2)-b., computation with logarithms should not be included.

V. DIFFERENTIAL and INTEGRAL CALCULUS

1. Objectives

To help students understand the concept of limit and deepen their understanding of the concepts and laws of differentiation and integration, thereby fostering their abilities to apply such knowledge to simple elementary functions.

2. Contents

1) Limit.

a. Limit of a series

b. Limit of a functional value

Terms and Symbols: convergence, divergence, ∞

2) Differential calculus and its application.

a. Derivatives

a) differential calculus of product and quotient of functions

b) differential calculus of composite functional and inverse functions

c) derivatives of trigonometric functions

d) derivatives of exponential functions and logarithmic functions

b. Application of derivatives

tangent, increase and decrease of functional values, velocity, acceleration, etc.

Terms and Symbols: natural logarithm, e, the second derivative, point of inflection

3) Integral calculus and its application.

a. Integral calculus

a) meaning of integration

b) integrations by substitution and by part in simple cases

c) integrations of various functions

b. Application of integration

a) area, volume, length of path, etc.

b) meaning of differential equations including a solving of such equation as $\frac{dy}{dx} = ky$

3. Points for Special Consideration in Teaching

1) In teaching the Contents 1)-a., instruction should be confined to infinite geometric series.

2) In relation to the Contents 2), the mean value theorem

should be taught only intuitively and only to the extent to make clear the relation between changes of a functional value and its derivative.

3) As for the Contents 2)-a.-a), simple functions such as $y = x^k$ (k is a rational number), $y = \sqrt{ax + b}$ and $y = \sqrt{ax^2 - b}$ should only be taught.

4) As for the Contents 3)-a.-b), integration by substitution should limit to include functions such as $ax + b = t$ or $x = a\sin\theta$, and integration by parts should be limited to those cases with simple functions where only a single application is required.

VI. PROBABILITY and STATISTICS

1. Objectives

To help students deepen their understanding of the fundamental concepts and laws of probability, and understand the concept of probability distribution, thereby developing their abilities to think statistically.

2. Contents

1) Arrangement of data.

a. Distribution of the variate

b. Representative values and degree of dispersion

Terms and Symbols: variance, standard deviation, Σ

2) Number of cases of possibilities.

a. Permutation and combination

b. Binomial theorem

Terms and Symbols: $_nP_r$, $_nC_r$, factorial, $n!$

3) Probability.

a. Probability and its basic laws

b. Independent trial and its probability

c. Conditional probability

Terms and Symbols: complementary event, exclusiveness, independence, dependence

4) Probability distribution.

a. Random variable and its probability.

b. Binomial distribution, normal distribution.

Terms and Symbols: expectation

5) Statistical inference.

a. Population and sample

b. Idea of statistical inference

Terms and Symbols: estimation, test

3. Points for Special Consideration in Teaching

Teaching of the Contents 5) should be limited to gaining an understanding of statistical inference through concrete examples.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. In preparing the teaching programme, the following points should be taken into consideration:

1) "Mathematics I" is required for all students in Grade 1, but "Mathematics II", "Algebra and Geometry", "Basic Analysis", and "Probability and Statistics" should be, as a general rule, taught as elective subjects after "Mathematics I".

2) "Differential and Integral Calculus" should be, as a general rule, taught after "Basic Analysis".

2. In teaching, the following should be considered.

1) In making students study several subjects after "Mathematics I", consideration should be given to the relation between the contents of various Subjects, and also the systematization of learning contents.

2) Terms and Symbols listed under the Sub-Section 2 of each Subject are indicated for the purposes of clarifying the extent and range which are to be treated in the Subject. In the teaching of Subjects, it is necessary to relate these terms and symbols with the Contents of the Subject.

3) In the teaching of computation, the teacher should make the students use various calculators as an occasion demands so as to improve the effectiveness of learning.

Section 4 Science

SUB-SECTION 1 OVERALL OBJECTIVES

To develop students' ability and positive attitude to inquire into nature through observations and experiments, to enhance their understanding of fundamental concepts of matters and phenomena in nature, and to develop students' scientific view of nature.

SUB-SECTION 2 SUBJECTS

I. SCIENCE I

1. Objectives

To make students understand principles and laws as well as realize the relationship between nature and human life, while observing and experimenting movement of bodies, changes of substances, and evolution and balance found in the natural world.

2. Contents

1) Force and energy.

Force and motion, motion of a falling body, work and heat, transformation and conservation of energy

2) Constitution of substances and their changes.

Constituent units of a substance, constituent elements of a substance, quantity, chemical changes and quantitative relationships between substances involved

3) Evolution

Cells and cell division, reproduction and development, heredity and variation, evolution of living things

4) Balance of the natural world.

Motion of the earth, configuration of the earth, earth's heat budget, ecosystems and circulation of substances

5) Man and nature.

Resources, utilization of solar energy and atomic energy, preservation of the natural environment

3. Points for Special Consideration in Teaching

1) In formulating the teaching programme, the Contents 1)

to 5) above should be integrated one another organically and it should be designed to make students understand the basic and fundamental concepts taking into account the close relation between these concepts. Thus attention should be paid to comprehensive summing up of learning on the basis of man-nature relationships.

2) In deciding the range and level of the Contents, consideration should be given to the following points:

a. In the teaching of 'force and motion' under 1), the laws of motion in a rectilinear motion should be dealt with. As for 'transformation and conservation of energy', it sould center upon kinetic energy, and other forms of energy should also be touched upon.

b. In teaching 'constituent units of a substance' under 2), the fact that an atom consists of nucleus and electrons should be touched upon.

c. Regarding 'cells' under 3), main instruction should be made on the thing that can be observed with an optical microscope. As for 'development', the principal topic of instruction should be the process of development of an animal at an early stage of the development. For 'heredity', the main topic of the study should be the Mendel's Laws. For 'variation', the main topic of the study should be mutation and for 'evolution of living things', index fossils should be touched upon.

d. As for 'motion of the earth' under 4), rotation and revolution of the earth should be taken up and evidences of these motions should also be principally dealt with. Change made in the earth's surface and the layered structure of the earth should be taught in 'configuration of the earth'. The air and water circulation should be taught in 'earth's heat budget'. In 'ecosystems and circulation of substances', organic nature and inorganic nature should be comprehensively dealt with centering around the circulation of substances and energy.

e. As for 'resources' under 5), fossil fuel, etc. should be taken up as an example, and its characteristics and the fact that its amount is finite should be taken up. 'Utilization of solar energy and atomic energy' should deal with how they are utilized as energy resources, and radioactivity should also be touched upon. In teaching 'preservation of the natural environment', the influence of the natural environment on human be-

ings and the influence of human activities on nature should be dealt with.

II. SCIENCE II

1. Objectives

To make students acquire scientific method by inquiring into the themes about matters and phenomena in the natural world and historical cases in the field of science, thereby developing students' ability to solve scientific problems.

2. Contents

1) Observations of and experiments on specific matters and phenomena.

2) Surveys of the natural environment.

3) Studies on historical cases in science.

3. Points for Special Consideration in Teaching

1) One or more appropriate study themes should be selected from the Contents 1) to 3) above, and they should be included in the yearly teaching programme.

2) Selection of the study themes should be made taking into account relationships with "Science I" and referring to the following points:

a. As for the Contents 1), scientific experiments which are the application of the content studied in "Science I", and those related to our daily life should be conducted as occasions demand.

b. As for the Contents 2), field work concerning biology and earth science and studies on various problems relating to the natural environment should be made.

c. As for the Contents 3), historical cases, such as the process of establishing principles and laws in respect of the important discoveries in the history of science, should be dealt with.

III. PHYSICS

1. Objectives

To make students understand principles and laws of physics by carrying out observations, experiments, etc. on force

and motion, wave motion, electricity and magnetism, and atoms which are selected from among natural matters and phenomena, thereby developing students' ability and positive attitude to consider things on the basis of physics.

2. Contents

1) Force and motion.

a. Various kinds of motion

circular motion, simple harmonic motion, universal gravitation

b. Momentum

momentum, impulse, conservation of momentum

c. Motion of gaseous molecules

the laws of gas, the kinetic-molecular theory of gases

2) Wave motion.

a. Properties of waves

longitudinal waves and transverse waves, propagation of waves, interference and diffraction of waves

b. Sound waves

transmission of sound waves, resonance or sympathetic vibration

c. Light waves

propagation of light, interference and diffraction of light, spectra of light

3) Electricity and magnetism.

a. Electric fields

electric fields, electric potential, electric capacity

b. Electric current

electric resistance, electric current and work

c. Electric current and magnetic fields

magnetic fields accompanying electric current, force exerted by a magnetic field on a current

d. Electromagnetic induction and alternating current

induced electromotive force, alternating current, resonant circuits, electromagnetic waves

4) Atoms.

a. Electrons and light

electric charge and mass of an electron, wave nature of electron, corpuscular nature of light

b. Atoms and atomic nucleus

structure of an atom, constitution of a nucleus, radioactivity, nuclear energy

3. Points for Special Consideration in Teaching

1) In formulating the teaching programme, it should be designed so that the students can form the fundamental concepts in physics and acquire scientific method according to their ability taking into consideration the relation to "Science I".

2) In deciding the range and level of the Content, consideration should be given to the following points:

a. In teaching 'the kinetic-molecular theory of gases' under 1)-c., internal energy and specific heat should be dealt with in a simple manner and studies on irreversible phenomena should be limited to showing simple examples.

b. In teaching 'propagation of light' under 2)-c., speed, reflection, and refraction of light should be dealt with.

c. In teaching 'electric capacity' under 3)-a., the intensity of the electric field in a dielectric should not be touched upon. In teaching 'electric resistance' under 3)-b., free electrons that can travel in conductors and semiconductors should be touched upon. As for 'alternating current' under 3)-d., generation of alternating current and its fundamental properties should be dealt with. For 'resonant circuits' and

'electromagnetic waves' also under 3)-d., the teaching should be done mainly by experiments.

d. As for the instruction of 'structure of an atom' under 4)-b., the energy levels of hydrogen atoms, for instance, should be taken up on the basis of the spectra of light. In 'nuclear energy' also under 4)-b., problems of utilization and safety of the atomic power should be touched upon.

IV. CHEMISTRY

1. Objectives

To make students understand principles and laws of chemistry by carrying out observations, experiments, etc. on chemical properties of substances, states of substances, and chemical reactions which are selected from among natural matters and phenomena, thereby developing students' ability and positive attitude to consider things on the basis of chemistry.

2. Contents

1) Chemical properties of substances.

a. Inorganic substances

simple substances, compounds, confirmation of ions

b. Organic compounds

characteristics of organic compounds, compounds consisting of carbon, hydrogen, and oxygen, compounds possessing nitrogen

c. Polymers

natural polymers, synthetic polymers

2) States of substances.

a. Pure substances

gases, liquids, solids

b. Mixtures

partial pressure of a gas, solution, colloidal solution

3) Chemical reactions.

a. Rates of reaction

slow and rapid reactions, catalysts

b. Chemical reactions and the associated heat

heat of reaction, thermochemical equations

c. Chemical equilibrium

reversible chemical reactions, dynamic nature of chemical equilibrium

d. Reactions between acids and bases

acids and bases, neutralization, hydrogen ion concentration

e. Oxidation-reduction reaction

oxidation and reduction, electrolysis, the ionization tendency of metals, electric cells

4) Structure of matter.

a. Structure of an atom

atomic structure models, arrangement of electrons around the nucleus, periodic table of the elements

b. Chemical bond

ionic bond, covalent bond, structure and properties of matter

3. Points for Special Consideration in Teaching

1) In formulating the teaching programme, it should be designed so that the students can form the fundamental concepts in chemistry and acquire scientific method according to their ability taking into consideration the relation to "Science I".

2) In deciding the range and level of the Content, consideration should be given to the following points:

a. For 'Inorganic substances' under 1)-a., major substances and ions that have some connection with natrium, kalium, calcium, aluminum, copper, silver, iron, halogen, sulfur, and nitrogen should be taken up. In the study of 'compounds possessing nitrogen' under 1)-b., amines should be mainly dealt with.

b. In teaching 'gases' under 2)-a., the kinetic-molecular theory of gases should not be treated by means of formulas. Studies on 'solids' also under 2)-a. should briefly deal with simple crystal lattices.

c. As for 3)-a. 'Rates of reaction', effects of the concentration and temperature of the reacting solution on the rates should be dealt with qualitatively. The teaching of 3)-c., 'Chemical equilibrium' should be limited to qualitative one.

d. As for 4)-a., 'Structure of an atom', the study should be limited to the Bohr's atomic model. Instruction on 'arrangement of electrons around the nucleus' under 4)-a. should be limited to the elements in the first through third periods in the periodic table of the elements and to the atoms of alkali metals, halogens, and rare gases. As for 'structure and properties of matter' under 4)-b., the fact that substances are classified into three major groups, that is, salts, molecular substances and metals on the basis of types of chemical bond should be taught.

V. BIOLOGY

1. Objectives

To make students understand principles and laws of biology by carrying out observations, experiments, etc. on formation of a bio-organism, living bodies and energy, homeostasis and regulation, and biotic communities which are selected from among natural matters and phenomena, thereby developing students' ability and positive attitude to consider things on the basis of biology.

2. Contents

1) Formation of a bio-organism.

a. Formation of cells and tissues

cells and cell differentiation, histogenesis

b. Development and morphogenesis

development and differentiation of animals, growth and morphosis of plants

2) Living bodies and energy.

a. Metabolism and energy transfer

chemical reactions in the living bodies and enzymes, anabolism, catabolism

b. Genes and appearance of characteristics

structure of a gene and its duplication, genes and enzymes

3) Homeostasis and regulation.

a. Animal behaviour

receptors and effectors, structure and function of the nervous system, stimuli and animal behaviour

b. Homeostasis and regulation of individuals

maintenance of homeostasis, nervous system and hormones

4) Biotic communities.

a. Organization of biotic communities

animal communities, plant communities

b. Changes in biotic communities

changes in animal communities, succession, distribution of living things

3. Points for Special Consideration in Teaching

1) In formulating the teaching programme, it should be designed so that the students acquire the fundamental concepts in biology and learn scientific method according to their ability taking into consideration the relation to "Science I".

2) In deciding the range and level of the Contents, consideration should be given to the following points:

a. The teaching of 1)-a., 'Formation of cells and tissues', should not be done at the molecular level. For 'development and differentiation of animals' under 1)-b., the main teaching topic should be the morphogenesis.

b. As for 'anabolism' under 2)-a., the teaching should be limited to have students understand that there are the light and dark reactions in photosynthesis. As for 'catabolism' also under 2)-a., instruction on the pro-

cess of glycolysis, TCA cycle, and the electron transport system in relation to respiration, should be limited only to touching upon the existence of these aspects. In 'genes and enzymes' under 2)-b., if the mechanism of appearance of characteristics of genes is taken up, instruction should be given in a simple manner.

c. In teaching 'structure and function of the nervous system' under 3)-a., the mechanism of excitation of nerves should also be briefly dealt with. As for the teaching of 'maintenance of homeostasis' under 3)-a., it should be limited to taking up some typical examples.

d. Instruction of 'distribution of living things' under 4)-b., should be made centering upon the ecological distribution, and the geographical distribution of living things in the world should not be taught by mere naming of the living things.

VI. EARTH SCIENCE

1. Objectives

To make students understand principles and laws of earth science by carrying out observations, experiments, etc. on the structure of the earth, history of the earth, and the structure of the universe, which are selected from among natural matters and phenomena, thereby developing students' ability and positive attitude to consider things on the basis of earth science.

2. Contents

1) Structure of the earth.

a. Earth as a planet

characteristics of earth, terrestrial magnetism and the earth's gravity

b. Atmosphere and oceans

movement of air, movement of sea water, interaction between air and sea water

c. Earth's internal energy

earthquakes, magma and igneous activities

2) History of the earth.

a. Strata

formation of strata, stratification and contrast between layers

b. The earth's crust

recent changes in earth's crust, changes in earth's crust in eras of the geologic time

c. Evolution of the earth

primordial earth, eras of geologic time

d. Geological features of the Japanese Islands

characteristics of the Japanese Islands, formation of the Japanese Islands

3) Structure of the universe.

a. The sun

configuration of the sun, activities of the sun

b. Permanent stars

stellar radiation, evolution of stars

c. The Galaxy and the universe

the galaxy, extra-galactic nebulas, the universe

3. Points for Special Consideration in Teaching

1) In formulating the teaching programme, it should be designed so that the students can acquire the fundamental concepts in earth science and learn scientific method according to their ability taking into consideration the relation to "Science I".

2) In deciding the range and level of the Contents, consideration should be given to the following points:

a. Instruction of 'characteristics of the earth' under 1)-a., should be made by comparing the earth with other principal planets. In the teaching of 'terrestrial magnetism and the earth's gravity' also under 1)-a., changes in terrestrial magnetism and the geoid should be included. 'Interaction between air and sea water' under 1)-b. should mainly deal with the regula-

tion of the atmospheric temperature by oceans, adjustment of the amount of carbon dioxide, and water circulation. In the teaching of 'magma and igneous activities' under 1)-c., the heat flow in the earth's crust should be touched upon.

b. In the teaching of 'stratification and the contrast between layers' under 2)-a., geological maps should be taught, but only introductory topics should be dealt with. In "primordial earth" under 2)-c., several theories on the origin of the earth which are now generally propounded should be taken up and the origin of the air and oceans should also be taught. As for 'characteristics of the Japanese Islands' under 2)-d., emphasis should be laid upon geological characteristics of the Japanese Island on the earth.

c. In 'configuration of the sun' under 3)-a., the sun should be dealt with as one of the permanent stars. The nuclear fusion which is the source of the sun's energy should not be treated in detail. In 'stellar radiation' under 3)-b., it should be taught that the radiation has been the key to obtain the information on the universe. In 'the universe' under 3)-c., cosmology should be touched upon.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. Students should be required to study "Science I" in Grade 1 as a rule, and to study "Science II", "Physics", "Chemistry", "Biology" and "Earth Science" in the subsequent years as electives, as a rule, after studying "Science I".

2. In the teaching of the Contents, due attention should be paid to the fostering of attitude toward respect for living things and preservation of the natural environment.

3. In undertaking observations, experiments and field work, it is necessary to give thorough guidance on the prevention of accidents, and pay due attention to the handling and disposal of chemicals.

Section 5 Health and Physical Education

SUB-SECTION 1 OVERALL OBJECTIVE

To make students promote health, improve physical strength, and seek harmonious development of their minds and bodies, through the understanding of health and physical strength and the rational practice of exercises, and to develop the attitude leading to a healthy and vital life.

SUB-SECTION 2 SUBJECTS

I. PHYSICAL EDUCATION

1. Objectives

To make students practice various types of exercises rationally, thereby improving their exercising skills and, through the experience of these exercises, to have students develop such attitudes as fairness, co-operation and responsibility, and promote the development of strong and healthy minds and bodies, and develop the ability and attitude of practicing exercises regularly throughout the life.

2. Contents

A. Gymnastics

a. Exercises promoting rhythmical movement, timely movement and quick movement.

b. Exercises with dynamic movement and those strengthening ability to continue movement.

B. Individual sports

a. Apparatus exercise.

b. Athletic sports.

c. Swimming.

C. Team sports

a. Basketball.

b. Handball.

c. Volleyball.

d. Soccer.

e. Rugby.

D. Combat sports

a. *Judo* (Japanese wrestling).

b. *Kendo* (Japanese fencing).

E. Dance

F. Theory of physical education

a. Characteristics of physiological, psychological and kinetic aspects of exercises.

b. Prescription of exercises and methods of training.

c. Modern society and exercises.

3. Points for Special Consideration in Teaching

In teaching the Contents, consideration should be given to the following points:

a. With regard to A. and F. of the Contents above, these items should be taught, as a rule, to all students in every grade.

b. With regard to B. of the Contents above, one or two items from the items listed in the Contents should be taught to students in every grade.

c. With regard to C. of the Contents above, two items from the listed items should be taught to students in Grade 1, while one or two items to students in Grade 2 and over.

d. The Contents D. above is mainly for boys, and one item from the listed items should be taught to students in every grade.

e. The Contents E. above is mainly for girls and it should be taught to students in every grade. "Dance" refers mainly to a creative dance, but a folk dance is also allowed to include.

f. In the light of the conditions of the school as well as of the region, other items of sports from among softball, *sumo*, archery, wrestling, *naginata*, tennis, table-tennis, badminton, skiing and skating can be selected and taught in each grade.

g. Total school hours to be allotted to F. of the

Contents above in every grade should range 5% to 10% of the total school hours for Physical Education.

h. In teaching each item from A. to E. of the Contents above, the teacher should pay attention to safety. In addition, the teacher should give appropriate instruction on group activities with reference to the characteristics of each activity.

II. HEALTH

1. Objectives

To have students deepen their understanding of the functions of body and mind, the relationship between health and environment, the significance of health in group life, and to make them preserve and improve their health, thereby developing the ability and attitude of contributing to the enhancement of health in group life.

2. Contents

1) Mental and physical functions.

a. Functions of respective organs in the body and their integration.

b. Cerebrum and mental functions.

c. Needs and adaptation mechanism.

d. Interrelation of the mind and the body.

2) Health and environment.

a. Civilized society and health.

b. Injury to health due to environmental pollution and prevention of the pollution of natural environment.

c. Harmony between health and natural environment.

3) Vocational life and health.

a. Diseases related to specific jobs and labour accidents.

b. Safety and hygiene management at working places and promotion of health.

c. Rehabilitation.

4) Health in a group.

a. Healthy home life.

b. Health standard of the nation.

c. Public health activities and the system of health and medical care.

3. Points for Special Consideration in Teaching

In teaching the Contents, consideration should be given to the following points:

a. With regards to the functions of respective organs in the body under 1)-a., respiration organs, circulatory organs and sexual organs should be taken up.

b. With regards to the prevention of the pollution of the natural environment under 2)-b., legal measures for the prevention should also be dealt with.

c. With regards to the promotion of health under 3)-b., necessity of the utilization of free time for sports in accordance with the characteristics of respective working places should be dealt with.

d. With regards to 4)-a., family planning, health of the mother and child and health of the aged should be mainly dealt with, and, as regards 4)-c., international activities concerning health should also be dealt with.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS

1. In principle, students should take "Physical Education" in succession in every grade, and the number of credits to be earned in every grade should be distributed as equally as possible through the grades.

2. It is desirable to have students in the full-time course study "Health" in Grades 1 and 2 and those in the part-time course in the grades corresponding to the grades of the full-time course.

3. In preparing the teaching programme of Health and Physical Education, consideration should be given to realizing the objectives of physical education in school, paying due attention to the relations with the programme of Special Activities and activities conducted in sports clubs, so that physical education activities in the school can be daily and comprehensively conducted.

Section 6 Art

SUB-SECTION 1 OVERALL OBJECTIVES

To have students enrich ther artistic ability, feel joy of creation, foster the attitude to respect art, and cultivate rich sentiment.

SUB-SECTION 2 SUBJECTS

I. MUSIC I

1. Objectives

Through various musical activities, to have students develop their ability in creative expression, increase the ability in appreciation of music and cultivate their love for music.

2. Contents

A. Expression

1) As regards singing, instruction should focus on the following points:

a. Accurate reading of the musical notation, and basic skills of voicing.

b. Understanding of the song-texts, grasping of the image of music, and contrivance of vocal expression.

c. Harmonization and balancing of voice parts in choruses.

2) As regards instrumental music, instruction should focus on the following points:

a. Basic playing techniques of musical instruments, and correct pitch and beautiful tone colours.

b. Harmonization and balancing of voice parts in ensembles.

3) As regards composition, instruction should focus on the following points:

a. Tempo, rhythm, note, etc.

b. Composition of short pieces and performance of them.

B. Appreciation

As regards appreciation, instruction should focus on the following points:

a. Characteristics of voices and musical instruments used and their effects in expression.

b. History of music.

c. Characteristics of performance styles and expression in the traditional Japanese music.

3. Points for Special Consideration in Teaching

1) In dealing with the Contents, consideration should be paid not to be partial to either A. or B. of the Contents, but to interrelate the items under A. and B.

2) In selecting the teaching materials for expression, folk songs of the locality should be included.

3) In selecting the teaching materials for appreciation, local music and folk music should be included. In dealing with the traditional Japanese music, music played by *koto*, *shamisen*, and *shakuhachi* should be the major pieces.

II. MUSIC II

1. Objectives

Through rich musical experiences, to have students deepen the understanding of music, develop the ability of expression and appreciation, and cultivate their love for music.

2. Contents

A. Expression

1) As regards singing, instruction should focus on the following points:

a. Correct reading of the musical notation, and increasing of vocal range.

b. Understanding of the song-texts, grasping of the image of music, and improvement of expression.

c. Creative expression in choruses.

2) As regards instrumental music, instruction should focus

on the following points:

a. Mastery of playing techniques and improvement of expression.

b. Creative expression in ensembles.

3) As regards composition, instruction should focus on the following points:

a. Contrivance of appropriate harmonization between melodies and chords.

b. Composition of pieces of chorus and ensemble, and their performance.

B. Appreciation

As regards appreciation, instruction should focus on the following points:

a. Styles and forms of music.

b. Characteristics of modern and contemporary music.

c. Relationship between music and literature in the traditional Japanese music.

3. Points for Special Consideration in Teaching

1) As regards A. of the Contents, the teacher can select either 1), 2) or 3) listed under A., in the light of students' characteristics, the realities of the region and the school.

2) In selecting the teaching materials for expression, folk songs of the region should be included.

3) In dealing with the traditional Japanese music, *gidayū-bushi*, *no-gaku*, and *biwa-gaku* should be the main pieces.

III. MUSIC III

1. Objectives

Through rich musical experiences, to have students further deepen the understanding of music, develop the musical skills, expand the knowledge of music, and understand traditions and new trends in music culture.

2. Contents

A. Expression

1) Vocal music

a. Solo

b. Duet

c. Chorus

2) Instrumental music

a. Solo

b. Duet

c. Ensemble

3) Composition

Composition using sound-producing materials, and its performance.

B. Appreciation

As regards appreciation, instruction should focus on the following points:

a. Relationship between music and the society and the culture.

b. Characteristics of the traditional Japanese music viewed from its cultural background.

3. Points for Special Consideration in Teaching

1) In teaching the Contents, the teacher can select any one from the items listed under A. and B. of the Contents, in the light of students' characteristics, the realities of the region and the school.

2) In selecting the teaching materials for expression, folk songs of the region should be included.

3) As to the teaching materials for appreciation, the folk music of the locality should be included. In dealing with the traditional Japanese music, appropriate pieces of music can be selected in accordance with the students' characteristics, the realities of the region and the school.

IV. FINE ARTS I

1. Objectives

Through the formative activities of creation in paint-

ing, modelling and carving, and design, to have students enrich their artistic experiences, develop the ability of expression and appreciation, and cultivate their artistic taste.

2. Contents

A. Expression

1) As regards painting, instruction should focus on the following points:

a. Understanding of the motive with fresh view and emotion.

b. Devices in the use of painting materials and tools.

c. Expression by colours and shapes in accordance with the intention.

2) As regards modelling and carving, instruction should focus on the following points:

a. Understanding of the motive with fresh view and emotion.

b. Devices in the use of modelling and carving materials and tools.

c. Expression by volume and surface in accordance with the intention.

3) As regards graphic design, instruction should focus on the following points:

a. Ideas to clarify the objectives and conditions.

b. Devices in the use of design materials and tools.

c. Expression by colours and shapes in accordance with the intention.

B. Appreciation

As regards appreciation, instruction should focus on the following points:

a. Excellence and beauty of works of painting and those of modelling and carving.

b. Ideas and sentiments of artist and their expression.

c. Relationship between fine arts and life.

3. Points for Special Consideration in Teaching

In teaching the Contents, consideration should be given not to be partial to either A. or B. of the Contents, but to interrelate them.

V. FINE ARTS II

1. Objectives

Through the formative activities of creation in fine arts, to have students refine their aesthetic sense, develop the ability of expression and appreciation, and cultivate their artistic taste.

2. Contents

A. Expression

1) As regards painting, instruction should be focused on the following points:

a. Understanding of a motive.

b. Right use of materials and tools.

c. Ways of expression by drawing, water-colour painting and print.

2) As regards modelling and carving, instruction should be focused on the following points:

a. Understanding of a motive.

b. Right use of materials and tools.

c. Ways of expression by modelling and carving.

3) As regards graphic design, instruction should be focused on the following points:

a. Effective and aesthetic ideas.

b. Right use of materials and tools.

c. Ways of expression considering order and technics.

B. Appreciation

As regards appreciation, instruction should be focused on the following points:

a. Excellence and beauty of the fine arts in association with the times, races, natural features, etc.

b. Intention of artist and their expression.

c. Harmony of nature and the formative works.

3. Points for Special Consideration in Teaching

As regards the selection of the items under A. of the Contents, it can be made among the items 1), 2) and 3) in the light of the students' characteristics, the realities of the region and the school.

VI. FINE ARTS III

1. Objectives

Through the formative activities of creation in fine arts, to have students further improve their ability of expression and appreciation, and deepen the understanding of fine arts.

2. Contents

A. Expression

1) Painting

a. Drawing, water-colour painting, etc.

b. Print.

2) Modelling and carving

modelling, molding, etc.

3) Design

a. Design and objectives/functions.

b. Design and materials/production techniques.

B. Appreciation

As regards appreciation, instruction should focus on the following points:

a. Characteristics of fine arts as the cultural heritage.

b. Roles that fine arts play in international understanding and co-operation.

3. Points for Special Consideration in Teaching

As regards the selection of the items under A. of the

Contents, it can be made among the items 1), 2) and 3) in the light of the students' characteristics, the realities of the region and the school.

VII. CRAFTS PRODUCTION I

1. Objectives

Through the creative activities of formation in design and production, to have students enrich their aesthetical experiences, develop the ability of expression and appreciation, and foster their taste for crafts.

2. Contents

A. Expression

1) As regards fundamentals of design, instruction should focus on the following points:

   a. Composition by colours and shapes aesthetically ordered.

   b. Composition in view of the effectiveness of materials and their structures.

   c. Expression in drawing.

2) As regards design and production for practical use and decorative purposes, instruction should focus on the following points:

   a. Ideas to clarify the objectives and conditions.

   b. Examination of plan by use of sketches, pictures and models.

   c. Devices in the use of the materials and tools.

   d. Production in consideration of process and techniques.

B. Appreciation

As regards appreciation, instruction should focus on the following points:

   a. Excellence and beauty of crafts.

   b. Propriety in view of functions, materials, structures and techniques.

   c. Relationship between crafts and life.

3. Points for Special Consideration in Teaching

In teaching the Contents, the teacher should not be partial to either A. or B. of the Contents, but to interrelate them.

VIII. CRAFTS PRODUCTION II

1. Objectives

Through the creative activities of formation in crafts production, to have students refine the formative sense, develop the ability of expression and appreciation, and foster their taste for crafts.

2. Contents

A. Expression

1) As regards design and production of crafts for practical use, instruction should focus on the following points:

a. Functional and aesthetic ideas.

b. Effective use of the materials and tools.

c. Production in consideration of process and techniques.

2) As regards design and production of crafts for decorative purposes, instruction should focus on the following points:

a. Functional and aesthetic ideas.

b. Effective use of the materials and tools.

c. Production in consideration of process and techniques.

B. Appreciation

As regards appreciation, instruction should focus on the following points:

a. Excellence and beauty of crafts in association with the times, races, natural features, etc.

b. Roles that crafts play in the daily life.

c. Harmony of nature with formative works.

3. Points for Special Consideration in Teaching

In teaching A. of the Contents, selection can be made from among the items 1) and 2) in the light of the students' characteristics, and the realities of the region and the

school.

IV. CRAFTS PRODUCTION III

1. Objectives

Through the creative activities of formation in crafts production, to make students further improve their ability of expression and appreciation, and deepen their understanding of crafts production.

2. Contents

A. Expression

1) Design and production of crafts for practical use.

2) Design and production of crafts for decorative purposes.

3) Design and production of crafts for environment.

B. Appreciation

As regards appreciation, instruction should focus on the following points:

a. Characteristics of crafts as cultural heritage.

b. Roles that crafts play in international understanding and co-operation.

3. Points for Special Consideration in Teaching

In teaching A. of the Contents, selection can be made from among the items 1), 2) and 3) in the light of the students' characteristics, and the realities of the region and the school.

X. CALLIGRAPHY I

1. Objectives

To enhance students' ability to write and copy in calligraphy, to develop the basic ability of its expression and appreciation, and to foster their love for calligraphy.

2. Contents

A. Expression

1) As regards copying in calligraphy, instruction should be focused on the following points:

a. Understanding of the whole construction in terms of variation and coherence.

b. Understanding of the construction of individual letters in terms of balance and symmetry.

c. Devices in the use of tools.

d. Ways of expression of dots and strokes and of the nature of lines by the different use and moves of a writing brush.

2) As regards creative writing, instruction should be focused on the following points:

a. Selection of words, prose and poetry and selection of a calligraphic style according to one's special interest and intention, or for specific purposes.

b. Thickness and lightness of calligraphy ink, and letters written with a soaked brush and those with not a well-soaked brush, and effects of *sumitsugi* or timing of soaking.

c. Stretch of writing.

d. Relations between the nature of lines of a letter and the uses of writing brushes.

B. Appreciation

As regards appreciation, instruction should be focused on the following points:

a. Interest in the beauty of calligraphy writing.

b. Understanding of the basic components constituting the beauty of calligraphy writing.

c. Enjoyment of expression according to one's interest and intention.

d. Styles of *Kanji* or Chinese characters and the formation of *Kana* or the Japanese syllabary.

3. Points for Special Consideration in Teaching

1) In teaching the Contents, consideration should be given so as not to be partial to either A. or B., and the both should be interrelated.

2) The items under the Contents A. should be taught with

writing Chinese characters in the printed style and cursive style, and with the cursive *kana* characters. Teaching of the *rei* style, the anomalous Japanese cursive style, seal engraving, and the carved style of writing are also allowed to teach.

XI. CALLIGRAPHY II

1. Objectives

To enhance students' ability in the expression and appreciation of calligraphy writing, to understand the theory and traditions of calligraphy, and to foster their love for calligraphy writing.

2. Contents

A. Expression

1) As regards copying in calligraphy, instruction should be focused on the following points:

   a. Understanding of the whole construction.

   b. Shape of a letter, dots and strokes in writing and the relation of ways of a writing brush to the nature of lines written.

2) As regards creative writing, instruction should be focused on the following points:

   a. Selection of materials and of calligraphic style according to one's interest and intention, or for a specific purposes.

   b. Devices in the whole construction.

   c. Effective use of calligraphy ink and careful selection of the materials and tools to be used.

B. Appreciation

As regards appreciation, instruction should be focused on the following points:

   a. Intuitive understanding of the beauty of calligraphy writing.

   b. Understanding of the components constituting the beauty of calligraphy writing.

c. Calligraphy writers and their works in association with the times and the natural features.

d. Roles of calligraphy writing in life.

3. Points for Special Consideration in Teaching

1) In teaching the Contents B. any of the items a., b., c. and d. can be selected in the light of the students' characteristics, and the realities of the region and the school.

2) In teaching the Contents A., consideration should be given so as not to be partial to either the item 1) or 2). As for Chinese characters and *kana*, instruction can be given on any of the following: the printed, cursive, very cursive, *rei*, *ten* styles of writing, the Japanese cursive syllabary and the anomalous Japanese cursive syllabary. In addition, consideration should also be given to dealing with *tenkoku* or seal engraving.

XII. CALLIGRAPHY III

1. Objectives

To promote the development of students' ability in creative calligraphic expression and appreciation, and to deepen their understanding of the theory and traditions of calligraphy.

2. Contents

A. Expression

1) As regards copying in calligraphy, instruction should be focused on the following points:

a. Voluntary selection of original texts for copying.

b. Model copying.

2) As regards creative writing, instruction should be focused on the following points:

a. Consideration of the whole idea of writing according to one's interest and intention, and for specific purposes.

b. Relation between the effects of creative writing and the tools and materials used.

B. Appreciation

As regards appreciation, instruction should be focused on the following points:

a. Diversity of calligraphic beauty and the characteristics of calligaphic works.

b. Relation between calligraphy and culture.

c. Representative theories and works of calligraphy in Japan and China.

3. Points for Special Consideration in Teaching

In teaching the Contents A., stress can be put on either the item 1) or 2), according to a specific purpose, in the light of the students' characteristics, and the realities of the region and the school. In teaching of calligraphic expression, selection can also be made from among Chinese characters, *kana* or the combination of the both.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS

1. The subject bearing the number 'I' as a subject title in Music, Fine Arts, Crafts Production and Calligraphy is to be studied first.

2. The subject bearing the number 'II' as a subject title is to be studied after the corresponding subject bearing the number 'I' has been studied.

3. The subject bearing the number 'III' as a subject title is to be studied after the corresponding subject bearing the number 'II' has been studied.

Section 7 Foreign Languages

SUB-SECTION 1 OVERALL OBJECTIVES

To develop students' ability to understand a foreign language and express themselves in it, to deepen their interest in a language, and to understand the daily life and way of thinking of foreign people.

SUB-SECTION 2 SUBJECTS

I. ENGLISH I

1. Objectives

To develop students' basic ability of hearing, speaking, reading and writing in English, while grasping the outline or main points of the matters, and develop their attitude of understanding English and expressing themselves in English.

2. Contents

1) Language activities.

In order to develop students' ability of understanding English and expressing themselves in English, the following language activities should be conducted:

a. Hearing and speaking

The following items are to be taught:

a) To grasp the main points in topics and to understand the necessary contents.

b) To speak without missing important things, by arranging what one intends to express.

c) To reply accurately after catching the intention of the speaker.

b. Reading

The following items are to be taught:

a) To read aloud correctly with clear pronunciation.

b) To read aloud or silently considering the content of the sentence.

c) To read aloud so that the meaning of what is written may be expressed adequately after understanding the content of the sentence.

d) To grasp the meaning of what is written as a whole.

c. Writing

The following items are to be taught:

a) To write down the sentence accurately after listening to it.

b) To write without missing major points, by arranging what one intends to express.

c) To catch the content of what is written and to write about it.

2) Language materials.

The language activities mentioned in 1) are to be conducted, as a rule, by using the following language materials in addition to the English language materials listed under Chapter 2, Section 9, II. of the Course of Study for Lower Secondary Schools.

The language activities indicated in a. and c. above, however, should be conducted by using the basic language materials selected from among the above-mentioned language materials.

The language materials used should be of current and standard English.

a. Sentence patterns

a) 'Subject+Verb+Complement' pattern, in which the verb is other than 'be' and the complement is a present participle.

b) 'Subject+Verb+Object' pattern, in which the object begins with an 'if' or a 'whether' clause.

c) 'Subject+Verb+Indirect object+Direct object' pattern, in which the direct object is 'what+infinitive' or 'what+clause or that+clause', or 'if+clause' or 'whether+clause'.

d) 'Subject+Verb+Object+Complement' pattern, in which the complement is adjective or a present participle or infinitive.

e) Other sentence patterns
Such as "It+be+∼+clause beginning with 'that'".

b. Words and idioms

a) 400 to 500 new words in addition to the words studied at lower secondary school.

b) Basic idioms are to be taught.

c. Grammatical items

a) Pronoun: relative pronoun 'what'.

b) Adverbs: restrictive use of relative adverbs 'when' and 'where'.

c) Tenses: present perfect progressive and past perfect.

d) Passive voice: future tense.

e) Infinitives: those used adverbially to express 'cause'.

3) Special cases, such as the students who study English for the first time at upper secondary school.

For the students studying English for the first time, the language activities mentioned in 1) are to be conducted, as a rule, by using the language materials listed under Chapter 2, Section 9, II. of the Course of Study for Lower Secondary Schools, and the language materials for 2) are to be properly selected in the light of the students' ability.

3. Points for Special Consideration in Teaching

1) Consideration should be given so that harmonious balance is kept among activities of listening, speaking, reading and writing.

2) Through readjustment of the basic learning items studied at lower secondary school, the students should be further encouraged to learn them.

3) Students should be taught how to use an English-Japanese

or Japanese-English dictionary and they should be taught how to use a dictionary.

4) It is desirable to use the phonetic alphabets as an aid to teach pronunciation.

II. ENGLISH II

1. Objectives

To further develop students' basic ability of hearing, speaking, reading and writing in English, while grasping the outline or main points of the matters, and develop the positive attitude of understanding English and expressing themselves in English.

2. Contents

1) Language activities.

In conformity with 1. Objectives above, students should conduct the language activities shown in those for ENGLISH I.

2) Language materials.

The language activities mentioned in 1) are to be conducted, as a rule, by using the following language materials in addition to those language materials listed under Chapter 2, Section 9, II. of the Course of Study for Lower Secondary Schools and those in 2.-2) of I. ENGLISH I mentioned above.

The language activities of a. and c. above, however, should be conducted by use of the basic language materials selected from among those mentioned here.

Language materials used should be current and standard English.

a. Sentence patterns

a) 'Subject+Verb+Complement' pattern, in which the verb is 'be' and the complement is clauses beginning with 'what' or 'that' or 'if' or 'whether'.

b) 'Subject+Verb+Complement' pattern, in which the verb is verbs other than 'be' and the complement is a past participle.

c) 'Subject+Verb+Object+Complement' pattern, in which the complement is a past participle.

d) Other sentence patterns.

i) Subject+such verbs as seem+to infinitive.

ii) It+such verbs as seem+clauses beginning with 'that'.

b. Words and idioms

a) 600 to 700 new words in addition to the new words indicated in 2.-2)-b.-a) of I. of ENGLISH I.

b) Basic idioms are to be taught.

c. Grammatical items

a) Pronoun: 'it' referring to a noun phrase or a noun clause.

b) Pronouns: Prepositions+relative pronouns and non-restrictive use of relative pronouns.

c) Adverbs: Non-restrictive use of relative adverbs.

d) Tense: Future progressive, past perfect progressive and future perfect.

e) Subjunctive: Basic use of subjunctive.

f) Infinitives: Those used adverbially to express other than 'object' and 'cause'.

g) Participial construction: Basic use of participial construction.

3. Points for Special Consideration in Teaching

Those indicated in 3. of I. of ENGLISH I are applied.

III. ENGLISH II A

1. Objectives

To further develop students' basic ability of hearing, speaking in English, while grasping the outline or main points of the matters, and develop the positive attitude of understanding English and expressing themselves in English.

2. Contents

1) Language activities.

In order to make students conduct the language ac-

tivities of hearing and speaking, the following items are to be taught.

a. To grasp the main points in topics and to understand the necessary contents.

b. To speak in such a way that important things are not missed, after having arranged in order what one intends to express.

c. To reply accurately after catching the intention of the speaker.

2) Language materials.

The language activities mentioned in 1) are to be conducted, as a rule, by using the language materials properly selected from among those listed under Chapter 2, Section 9, II. of the Course of Study for Lower Secondary Schools and those in 2.-2) of I. of ENGLISH I and those in 2.-2) of II. of ENGLISH II.

The language materials used should be current and standard English.

IV. ENGLISH II B

1. Objectives

To further develop students' basic ability of reading English, while grasping the outline or main points of the matters, and develop the positive attitude of understanding English.

2. Contents

1) Language activities.

In order to make students conduct the language activities of reading, the following items are to be taught.

a. To read aloud correctly in clear-cut pronunciation.

b. To read alound or silently considering the content of the sentence.

c. To read aloud so that the meaning of what is written may be expressed adequately, after understanding the content of the sentence.

d. To grasp the meaning of what is written as a whole.

2) Language materials.

The language activities mentioned in 1) are to be conducted, as a rule, by using the language materials listed under Chapter 2, Section 9, II. of the Course of Study for Lower Secondary Schools and those in 2.-2) of ENGLISH II.

400 to 700 new words can be added further.

The language materials should be current and standard English.

3. Points for Special Consideration in Teaching

In conducting the language activities in 2.-1), consideration should be paid to the quantity and the level of the teaching materials, and the speed of reading.

V. ENGLISH II C

1. Objectives

To further develop students' basic ability of writing the sentences in English in such a way as to convey the outline or main points of the matters, and develop the positive attitude of expressing themselves in English.

2. Contents

1) Language activities.

In order to make students conduct the language activities of writing, the following items are to be taught.

a. To write down the sentence accurately after listening to it.

b. To write down in such a way that important things are not missed after having arranged in order what one intends to express.

c. To catch the content of what is written and to write about it.

2) Language materials.

The language activities mentioned in 1) are to be conducted, as a rule, by using the language materials properly selected from among those listed under Chapter 2, Section 9, II. of the Course of Study for Lower Secondary

Schools and those in 2.-2) of I. of ENGLISH I and those in 2.-2) of II. of ENGLISH II.

The language materials should be current and standard English.

VI. GERMAN

1. Objectives

The objectives conform to those of ENGLISH II.

2. Contents

1) Language activities.

The language activities conform to those of ENGLISH II.

2) Language materials.

The language activities mentioned in 1) above are to be conducted, as a rule, by using the following language materials in addition to those German language materials listed under Chapter 2, Section 9, II. of the Course of Study for Lower Secondary Schools.

The language activities of a. and c. below, however, should be conducted by use of the basic materials selected from among those mentioned above.

The language materials used should be of current and standard German.

a. Types of sentences

a) Declarative, interrogative, imperative, optative and exclamatory.

b) Main clauses and various types of subordinate clauses.

b. Words and idioms

a) 1,400 to 1,900 new words.

b) Basic idioms are to be taught.

c. Grammatical items

a) Kinds, forms and usage of articles.

b) Kinds, forms and usage of nouns.

c) Kinds, forms and usage of pronouns.

d) Forms and usage of adjectives.

e) Kinds and usage of numerals.

f) Kinds, forms, tense, infinitive, participle, narration and voice of verbs.

g) Kinds and usage of prepositions.

h) Kinds and usage of conjunctions.

i) Kinds and usage of adverbs.

j) Sentence components and word order.

3. Points for Special Consideration in Teaching

1) Consideration should be given to having a harmonious balance among activities of hearing, speaking, reading and writing.

2) Through readjustment of the basic learning items studied at lower secondary school, students should be further encouraged to master them.

3) Students should be taught how to use a German-Japanese or Japanese-German dictionary and they should be taught the main points of using a dictionary.

4) It is desirable to use the International Phonetic Alphabets as an aid for practicing a practical pronunciation.

5) New words in 2-2)-b.-a) above should be those words of frequent practical usage other than about 1,050 German words on the list of Chapter 2, Section 9, II. of the Course of Study for Lower Secondary Schools.

6) Those students who study German for the first time should be taught the most fundamental items to be selected from among the activities and the materials indicated in 2. Contents above.

VII. FRENCH

1. Objectives

The objectives conform to those of ENGLISH II.

2. Contents

1) Language activities.

Language activities conform to those of ENGLISH II.

2) Language materials.

Language activities mentioned in 1) above are to be conducted, as a rule, by using the following language materials in addition to the French language materials listed under Chapter 2, Section 9, II. of the Course of Study for Lower Secondary Schools.

The language activities in a. and c. below, however, should be conducted by use of the basic materials selected from among the language materials listed above.

Language materials used should be of current and standard French.

a. Types of sentences

a) Simple and complex sentences.

b) Affirmative and negative declarative sentences.

c) Affirmative and negative interrogative sentences.

d) Affirmative and negative imperative sentences.

e) Exclamatory sentences.

b. Words and idioms

a) 1,400 to 1,900 new words.

b) Basic idioms are to be taught.

c. Grammatical items

a) Kinds, forms and usage of articles.

b) Kinds, gender, number and usage of nouns.

c) Kinds, gender, number and usage of pronouns.

d) Kinds, gender, number, comparison, position and usage of adjectives.

e) Kinds, tense, conjugation, voice, participle, narration of verbs and the usage of auxiliary verbs.

f) Kinds, comparison, position and usage of adverbs.

g) Kinds and usage of prepositions.

h) Kinds and usage of conjunctions.

i) Kinds and usage of interjections.

j) Consistency of tense.

k) Inversion.

l) Sentence elements, word order and agreement.

3. Points for Special Consideration in Teaching

1) Consideration should be given to having a harmonious balance among the activities of hearing, speaking, reading and writing.

2) Through readjustment of the basic learning items studied at lower secondary school, students should be further encouraged to master them.

3) Students should be taught how to use a French-Japanese or Japanese-French dictionary and they should be taught the main points of using a dictionary.

4) It is desirable to use the International Phonetic Alphabets as an aid for practicing a practical pronunciation.

5) New words in 2-2)-b.-a) above should be those words of frequent practical usage other than about 1,050 French words on the list of Chapter 2, Section 9, II. of the Course of Study for Lower Secondary Schools.

6) Those students who study French for the first time should be taught the most fundamental items to be selected from among the activities and the materials indicated in 2. Contents above.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. In preparing the teaching programme, the following items should be taken into consideration:

(1) "ENGLISH I" should be taught, as a rule, in Grade 1, and "ENGLISH II" should be taught in succession for those who wish further to study English after studying "ENGLISH I."

(2) It is desirable to have students selectively study "ENGLISH II A", "ENGLISH II B" and "ENGLISH II C" in parallel with the study of "ENGLISH II."

(3) In case where students concurrently study a second foreign

language in addition to the first one, the number of credits for the second one may be reduced down to 2, and the fundamentals selected from among the items of the Contents of each Subject should be taught.

2. In teaching the Contents, the following items should be taken into consideration:

(1) As for the language activities, consideration should be given not to be partial to any of the items of language activities.

(2) In using the language materials, a proper judgement should be made concerning the extent of teaching depending upon Subject; i.e. distinguishing the items for mere understanding and those requiring expression beyond understanding.

(3) As for the topics for instruction, a variety of topics should be selected on the daily life, manners and customs, stories, geography, history, etc. of the people using the language concerned and of other people living in the world.

The topics should be developed in the forms of exposition, dialogue, story and drama and selection should be made from among these forms.

(4) A proper measure should be taken to meet the ability and aptitudes of students by use of individualized instruction and small group instruction, or by means of an effective utilization of audio-visual aids.

Section 8 Home Economics

SUB-SECTION 1 OVERALL OBJECTIVES

To make students acquire the fundamental and basic knowledge and techniques concerning clothing, food, housing, child rearing, home management, etc., understand the significance of home life, and develop necessary abilities and practical attitudes in home life and related occupations.

SUB-SECTION 2 SUBJECTS

I. GENERAL HOME ECONOMICS

1. Objectives

To make students acquire practically and comprehensively the fundamental knowledge and techniques concerning clothing, food, housing, child rearing, etc. from the standpoint of home management, and develop the ability and attitude for the rational management of home life, and its betterment.

2. Contents

1) Planning of home life, and family.
2) Planning of clothing in life, and dress making.
3) Planning of food in life, and cooking.
4) Planning of housing, and management of house.
5) Health of mother, and rearing of baby and infant.
6) Home projects, and school clubs for home life.

II. CLOTHING

1. Objectives

To make students acquire the knowledge and techniques concerning clothing, and develop the ability and attitude to select, make, care for and wear clothes in a rational way and to improve clothing in life.

2. Contents

1) Historical changes in clothes.
2) Designing of clothes.
3) Wearing of clothes.
4) Characteristics of clothing materials, and its arrangement.
5) Making of clothes.

6) Accessories and manual arts.

7) Present state and betterment of clothing in life.

III. FOOD

1. Objectives

To make students acquire the knowledge and techniques concerning food, and develop the ability and attitude to select materials, to prepare menus and to cook dishes in a rational way and to improve food in life.

2. Contents

1) Digestion, absorption and metabolism of nutritive substance.

2) Special nutrition.

3) Food processing.

4) Fundamentals of cooking.

5) Preparation of menus, and cooking.

6) Food hygiene.

7) Historical changes in food in life, and its betterment.

IV. CHILD REARING

1. Objectives

To make students acquire the knowledge and techniques concerning rearing of baby and infant, develop a desirable view of children, and develop the ability and attitude to strive for the healthy growth of children.

2. Contents

1) Historical changes in the view of children.

2) Infant rearing and motherhood.

3) Characteristics of the growth of baby and infant.

4) Life of baby and infant, and their health.

5) Mental growth and mental hygiene of baby and infant.

6) Plays of baby and infant, and children's culture.

7) Welfare of baby and infant.

V. HOME MANAGEMENT AND HOUSING

1. Objectives

To make students acquire the knowledge and techniques concerning home management and housing, and develop the ability and practical attitude of contriving home life and managing it in a rational way by integral use of the knowledge and techniques acquired.

2. Contents

1) Home life and family relations.
2) Family cycle and family life planning.
3) Housework, and time for living.
4) Economic activities of the family.
5) Consumption and living.
6) Historical changes in housing, and living style.
7) Designing of a house.
8) Comfortableness in housing.
9) Housing situations in Japan.
10) Comprehensive practice training of home management.

VI. CLOTHES MAKING

1. Objectives

To make students acquire the knowledge and techniques of clothes making, and develop the ability and attitude to make clothes in an efficient, economical and aesthetical way.

2. Contents

1) Figure and clothes.
2) Solid and plane construction of clothes.
3) Making of Western-style clothes.
4) Making of Japanese-style clothes.
5) Rationalization of making of clothes.

VII. CLOTHING MATERIALS

1. Objectives

To make students acquire the knowledge and techniques concerning kinds and properties of clothing materials, and develop the ability and attitude to select clothing materials properly and to manage clothing in life in a rational way.

2. Contents

1) Kinds and properties of clothing materials.

2) Processing of clothing materials.

3) Functions of clothes and properties of clothing materials.

4) Situations of clothing in Japan.

VIII. CLOTHING MANAGEMENT

1. Objectives

To make students acquire the knowledge and techniques concerning the planning of clothing in life and arrangement of clothes, and develop the ability and attitude to manage clothing in life in a rational way.

2. Contents

1) Planning of clothing in life.

2) Clothes and health/hygiene.

3) Arrangement of clothes.

4) Rationalization of clothing management.

IX. ACCESSORY DESIGN

1. Objectives

To make students acquire the knowledge and techniques concerning accessory design, understand the historical changes in costume, and develop the ability and attitude to contrive and create better clothing in life.

2. Contents

1) Historical changes in costume.

2) Fundamentals of accessory design.

3) Wearing purposes and accessory design.

4) Personality and accessory design.

5) Ways of presentation of accessory design.

X. MANUAL ARTS

1. Objectives

To make students acquire the knowledge and techniques concerning handicrafts for accessory and handwork for interior decoration, develop creativity, and foster the ability and attitude of utilizing handwork in daily life.

2. Contents

1) Kinds of manual arts and its historical changes.

2) Manual arts and life.

3) Production of manual arts work.

XI. COOKING

1. Objectives

To make students acquire the knowledge and techniques concerning menus, cooking and collective feeding, and develop the ability and attitude of cooking in a rational way for the betterment of food in life.

2. Contents

1) Fundamentals of cooking.

2) Selection and purchase of foods.

3) Menus and cooking in accordance with types of cooking.

4) Menus and cooking for special occasions and entertaiment.

5) Menus and cooking of especially nutritious foods.

6) Significance of collective feeding.

7) Menus and cooking for collective feeding.

8) Organization for and administration of collective feeding programme.

9) Cooking facilities and equipment, heating sources and cooking utensils.

XII. NUTRITION

1. Objectives

To make students acquire the knowledge on the nutrition, and develop the ability and attitude for maintaining and promoting health through the application of the acquired knowledge to food in life.

2. Contents

1) Functions of nutritive substances.

2) Nutritional physiology.

3) Age and nutrition.

4) Labour and nutrition.

5) Assessment of nutritive conditions.

6) Nutrition for sick people.

7) Formation of food in life, and nutrition.

XIII. FOODSTUFF

1. Objectives

To make students acquire the knowledge and techniques concerning the properties and processing methods of foods, and develop the ability and attitude to use foodstuff in a rational way and to improve food in life.

2. Contents

1) Production and processing of foodstuff.

2) Vegetable foods and its processed ones.

3) Animal foods and its processed ones.

4) Seasoning, sweetening, spices and luxuries.

5) Foods storage and management.

XIV. FOODS SANITATION

1. Objectives

To make students acquire the knowledge on the foods sanitation, and develop the ability and attitude to manage a healthy life on food.

2. Contents

1) Significance of foods sanitation.

2) Foods and disease-causing microorganisms, parasites.

3) Natural poisons, chemical poisons, adulterants, and effects of additives.

4) Decomposition of foods.

5) Management of foods sanitation, and laws and regulations concerning foods sanitation.

XV. PUBLIC HEALTH

1. Objectives

To make students acquire the knowledge on the public health, and develop the ability and attitude to promote the health of the members of family and community and to con-

tribute to the enhancement of national health.

2. Contents

1) Significance of public health.

2) Prevention of diseases.

3) Hygiene for mothers and infants.

4) Environmental hygiene.

5) Collective sanitation.

6) Administration of sanitation, and laws and regulations concerning sanitation.

XVI. PRINCIPLES AND TECHNIQUES OF CHILD REARING

1. Objectives

To make students acquire the knowledge and techniques concerning the principles and contents of child rearing and children's culture, and understand the desirable way of child rearing, and develop the ability and attitude to rear the infants and children properly.

2. Contents

1) Significance of child rearing.

2) Historical changes in the theories of child rearing.

3) Fundamental principles of child rearing.

4) Fundamental techniques of child rearing.

5) Contents of child rearing.

6) Children's culture and creative activities.

7) Facilities and equipment of the child care institutions.

8) Practices in child rearing.

9) Laws and regulations concerning child care.

XVII. CHILDREN'S HEALTH

1. Objectives

To make students acquire the knowledge and techniques concerning the physical growth, nutrition, diseases and nursing of children, and develop the ability and attitude to strive for the maintenance and improvement of children's health.

2. Contents

1) Significance of children's health.

2) Growth/development and physiology of children.

3) Nutrition for children.

4) Health and life of children.

5) Diseases and nursing of children.

6) Health guidance for children.

XVIII. CHILD PSYCHOLOGY

1. Objectives

To make students acquire the knowledge of child psychology, understand the importance of mental growth and mental hygiene during infancy and childhood, and develop the ability and attitude to strive for the sound growth of children.

2. Contents

1) Children's life and the formation of their personality.

2) Psychology of babies.

3) Psychology of infants.

4) Psychology of school children.

5) Mental health and guidance of children.

6) Understanding of child psychology.

XIX. CHILD WELFARE

1. Objectives

To make students acquire the knowledge of child welfare, understand the desirable living environment for children, and develop the attitude of promoting child welfare.

2. Contents

1) Views of children, and child welfare.

2) Child welfare and the home.

3) Child welfare and the society.

4) Mechanism and system of child welfare.

5) Relationship between child welfare and social welfare.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. More than five-tenths of the total school hours allotted to Home Economics should be used in principle for experiments and practice.

2. In carrying out experiments and practice, consideration should be given to the management of facilities and equipment, and to the arrangement of learning environment. At the same time, attention should be paid to the handling of fire, tools, materials, etc. and due consideration should also be given to the guidance on the prevention of accident and to the safety and sanitation.

3. "General Home Economics" is to be treated as follows:

   1) This Subject should be taught in the first year for the learning of Home Economics.

   2) When the Subject is divided to study in two-year period, it is necessary to study it in succession.

   3) When the boys select this Subject, special consideration should be given to the appropriate selection of the contents for teaching in accordance with the provision under Section 7-4. of Chapter 1.

4. In teaching the Subject of "Home Management and Housing", consideration should be given to making students understand in a concrete way through practical activities related to clothing, foods and housing. In this regard, practice with lodging is desirable.

5. In teaching of collective feeding in the Subject of "Cooking", in-school practice as well as on-the-spot practice at firms and hospitals are desirable.

6. In teaching the Subject of "Principles and Techniques of Child Rearing", it is desirable to allocate enough time for practice, especially at child care institutions.

7. When the students in the general course study the Subjects of Home Economics, it is desirable to make them study the appropriate Subjects selected from among "Clothing", "Food", "Child Rearing", and "Home Management and Housing", paying attention to the realities of school and community, student's future courses and their aptitudes and interest.

8. The students in the nursing course are allowed to study "Fundamental Medical Science for Nursing" or "Child and Maternal

Section 9 Agriculture

SUB-SECTION 1 OVERALL OBJECTIVES

To have students acquire the fundamental and basic knowledge and techniques of production and management in each field of agriculture, understand the significance and role of agriculture, and foster the ability and attitude to strive for the development of agriculture and rural society.

SUB-SECTION 2 SUBJECTS

I. FOUNDATION OF AGRICULTURE

1. Objectives

To have students, through practical learning concerning cultivation of crops and livestocks, acquire the fundamental knowledge and techniques relating to agriculture, evoke an interest in and concern for agriculture and the learning of agriculture, and develop the ability of problem-solving in agricultural production and the desire and positive attitude for the promotion of agriculture.

2. Contents

1) Present status and role of agriculture.
2) Agricultural production and project.
3) Planning, management and evaluation of agricultural production.
4) School agriculture clubs.

II. COMPREHENSIVE PRACTICE

1. Objectives

To have students acquire the coherent and comprehensive techniques of agriculture, and foster the practical ability and attitude for the improvement of agriculture.

2. Contents

According to the need of each course, the appropriate contents should be prepared.

III. CROPS

1. Objectives

To have students understand the characteristics of crops

and the suitable environment appropriate to cultivation of crops, acquire the knowledge and techniques necessary for crop cultivation and its rationalization, and develop the ability and attitude to strive for the improvement of productivity.

2. Contents

1) Trends in crop production in Japan.

2) Characteristics of crops and techniques of cultivation.

3) Cultivation of food crops, industrial crops, and utilization of machines.

4) Facilities for regulation and storage.

5) Improvement and maintenance of farm land.

6) Utilization of farm land and crop production.

IV. VEGETABLES

1. Objectives

To have students understand the characteristics of vegetables and the suitable environment congenial to cultivation of vegetables, acquire the necessary knowledge and techniques for vegetable cultivation and utilization of horticultural facilities, and develop the ability and attitude to strive for the improvement of productivity.

2. Contents

1) Trends in vegetable production in Japan.

2) Characteristics of vegetables and techniques for the regulation of growth.

3) Cultivation of vegetable fruits and edible herbs and roots.

4) Structure and utilization of facilites for vegetable cultivation.

5) Managerial improvement in vegetable production.

V. ANIMAL HUSBANDRY

1. Objectives

To have students understand the characteristics of livestock and the suitable environment for raising of livestock, acquire the necessary knowledge and techniques for raising of livestock and utilization of facilities of animal husbandry, and develop the ability and attitude to strive for the improvement of productivity.

2. Contents

1) Trends in management of stock-raising.

2) Physiology and ecology of livestock and environment for raising of livestock.

3) Raising of livestock.

4) Livestock sanitation and processing of feces and urine.

5) Structure and utilization of facilities for animal husbandry.

6) Improvement of stock-raising management.

VI. FOOD PRODUCTION

1. Objectives

To have students understand the characteristics of processed food, ingredients and materials, acquire the necessary knowledge and techniques of food production, and develop the ability and attitude to strive for rational management of production.

2. Contents

1) Kinds and characteristics of processed food.

2) Ingredients and materials for food.

3) Production methods of processed food.

4) Food spoiling and storing methods.

5) Sanitation control in food preparation.

VII. SURVEYING

1. Objectives

To have students understand the structure, ways of adjustment, and use of surveying instruments and tools, acquire the necessary knowledge and techniques for surveying, and develop the ability to apply them to various types of project.

2. Contents

1) Surveying and types of surveying.

2) Plane surveying.

3) Surveying of undulations.

4) Photographic surveying.

5) Applied surveying.

VIII. SILVICULTURE

1. Objectives

To have students acquire the knowledge and techniques necessary for afforestation, and develop the ability and attitude to improve the productivity of forests and to strive for the promotion of tree-planting on national land.

2. Contents

1) Growth of trees and its environment.

2) Raising seedlings.

3) Afforestation.

4) Care and protection of forests.

5) Cultivation of trees for special use.

6) Management of forests for scenic beauty.

IX. PLANNING OF LANDSCAPE GARDENING

1. Objectives

To have students acquire the knowledge and techniques necessary for the planning and design of landscape gardening, and develop the ability and attitude to apply these in accordance with the purposes and given environment.

2. Contents

1) Maintenance of green areas' environment and planning of landscape gardening.

2) Foundation of drawing for landscape gardening.

3) Methods and design for landscape gardening.

4) Design of gardens.

5) Planning and design of a city and natural parks.

X. ENVIRONMENT FOR CULTIVATION OF CROPS

1. Objectives

To have students understand the relationship between cultivation environment and the growth of crops, acqure the necessary knowledge and techniques for the improvement of environment, and develop the ability and attitude to strive for the rationalization of cultivation of crops.

2. Contents

1) Natural environment and environment for cultivation of crops.

2) Elements of environment for cultivation of crops and the growth of crops.

3) Improvement of environment for cultivation of crops.

XI. AGRICULTURAL MACHINERY

1. Objectives

To have students understand the structure and functions of agricultural machinery, acquire the necessary knowledge and techniques for handling and maintenance of agricultural machinery, and develop the ability and attitude to strive for the rationalization of management.

2. Contents

1) Prime movers.

2) Transmissions.

3) Farming tractors.

4) Machines for operations.

XII. AGRICULTURAL MANAGEMENT

1. Objectives

To have students acquire the necessary knowledge and techniques to design and implement suitable programmes of agricultural management for each region, and develop the ability and attitude to strive for the improvement of agricultural management.

2. Contents

1) Trends in agriculture.

2) Managerial system and administration.

3) Agricultural bookkeeping.

4) Distribution system.

5) Diagnosis and managerial design.

6) Collective activities and agricultural co-operatives.

7) Agricultural policy, and laws and regulations concerning agriculture.

XIII. SERICULTURE

1. Objectives

To have students understand the characteristics and environment of silkworms, acquire the necessary knowledge and techniques for silkworm raising, and develop the ability and attitude to strive for the improvement of productivity.

2. Contents

1) Trends in silkworm raising.
2) Production of mulberries.
3) Structure of the silkworm body and functions of each organ.
4) Rearing of silkworms.
5) Improvement of the management of sericulture.

XIV. FRUIT TREES

1. Objectives

To have students understand the characteristics of fruit trees and suitable environment for fruit raising, acquire the necessary knowledge and techniques for fruit raising and management of orchards, and develop the ability and attitude to strive for the improvement of productivity.

2. Contents

1) Trends in fruit raising.
2) Characteristics of fruit trees and environment.
3) Cultivation of evergreen and deciduous fruit trees.
4) Process and storage of fruit.
5) Establishment and renovation of orchards.
6) Improvement of the management of fruit trees.

XV. FLOWERING PLANTS

1. Objectives

To have students understand the characteristics and environment of flowering plants, acquire the necessary knowledge and techniques for cultivation of flowers and utilization of floricultural facilities, and develop the ability and attitude to strive for the improvement of productivity.

2. Contents

1) Trends in floriculture.

2) Characteristics of flowering plants and cultivation techniques.

3) Cultivation of flowering plants.

4) Structure and utilization of floricultural facilities.

5) Managerial improvement in floriculture.

XVI. LIVESTOCK NUTRITION AND FEED

1. Objectives

To have students understand livestock nutrition and the characteristics of feed, acquire the necessary knowledge and techniques for the mixing and rationing of feed, and develop the ability and attitude to strive for the rational rationing of feed.

2. Contents

1) Livestock nutrition.

2) Kinds and characteristics of feed.

3) Evaluation of feed.

4) Rationing plan and feeding programme.

XVII. FARM HOUSEHOLD MANAGEMENT

1. Objectives

To have students acquire the necessary knowledge and techniques for managing the farm household economy, understand the relationship between agricultural management and farm household life, and develop the ability and attitude to strive for the improvement of farm household life.

2. Contents

1) Present status of farm household life.

2) Farm household economy.

3) Mechanism of the farm household management.

4) Farm household bookkeeping.

5) Improvement of farm household labour.

6) Farm household life and community.

XVIII. FOOD CHEMISTRY

1. Objectives

To have students understand the properties and nutrition of food, acquire the necessary knowledge and techniques for the analysis and tests of foods, and develop the ability and attitude to strive for applying these to food production.

2. Contents

1) Components and nutrition of foods.

2) Analysis of food components and the measurement of the properties of foods.

3) Food additives and sanitation.

4) Examination of food sanitation.

XIX. APPLIED MICROORGANISMS

1. Objectives

To have students understand the kinds, physiology, and culture of microorganisms in relation to foods, acquire the necessary knowledge and techniques for the utilization of microorganisms, and develop the ability and attitude to apply these in food production.

2. Contents

1) Kinds and uses of microorganisms.

2) Physiology of microorganisms.

3) Separation and culture of microorganisms.

XX. FOOD PRODUCTION MACHINERY

1. Objectives

To have students acquire the necessary knowledge and techniques concerning the structure, functions and operations of machinery for food production, and develop the ability and attitude to select and operate suitable machinery for food production.

2. Contents

1) Foundation of food production machinery.

2) Major machinery and apparatus for food preparation.

XXI. AGRICULTURAL CIVIL ENGINEERING DESIGN

1. Objectives

To have students acquire the necessary knowledge and techniques for designing and drawing of agricultural civil engineering structures, and develop the ability and attitude to apply these in various actual construction works.

2. Contents

1) Introduction to agricultural civil engineering design.
2) Strength and balance.
3) Beams, pillars and trusses.
4) Ferro-concrete and design of steel structure.
5) Designing and drawing of agricultural civil engineering structures.

XXII. MATERIALS AND EXECUTION OF WORKS

1. Objectives

To have students acquire the necessary knowledge and techniques concerning engineering materials and methods used in agricultural civil engineering works, and develop the ability and attitude to manage the operations of various engineering works.

2. Contents

1) Introduction to agricultural civil engineering works.
2) Civil engineering materials.
3) Soil properties.
4) Execution methods.
5) Administration and management of works and squaring.

XXIII. AGRICULTURAL IRRIGATION

1. Objectives

To have students acquire the necessary knowledge and techniques for the rational management of water in agriculture, and develop the ability and attitude to improve agricultural productivity through the improvement of farm land and agricultural irrigation facilities.

2. Contents

1) Functions of water in agriculture.

2) Still water pressure.

3) Flow of water channels.

4) Orifices and sluices.

5) Underground water.

6) Irrigation and drainage.

7) Development of water resources.

XXIV. FARMLAND DEVELOPMENT

1. Objectives

To have students acquire the necessary knowledge and techniques for the development of farmland, and develop the ability and attitude to expand and improve arable land.

2. Contents

1) Significance of farmland development.

2) Utilization of land and development of farmland.

3) Consolidation and conservation of farmland.

4) Regional development and rural planning.

XXV. FORESTRY CIVIL ENGINEERING

1. Objectives

To have students acquire the necessary knowledge and techniques for the arrangement of forest lands, forest civil engineering works, felling and skidding, and mechanization of forestry, and develop the ability and attitude to improve the productivity of forestry.

2. Contents

1) Forestry civil engineering and forests.

2) Planning and designing of forestry civil engineering.

3) Materials for forestry civil engineering.

4) Erosion control.

5) Felling and skidding.

6) Forestry machinery.

7) Forestry civil engineering and safety in operations.

XXVI. PROCESSING OF FORESTRY PRODUCTS

1. Objectives

To have students understand the characteristics of forestry products, acquire the necessary knowledge and techniques for their processing and utilization, and develop the ability and attitude to strive for the rational production and management.

2. Contents

1) Properties of lumber and its utilization.
2) Lumbering, and drying and storage of lumber.
3) Wood working.
4) Adhesion and painting of lumber.
5) Improved lumber.
6) Cracking and utilization of lumber.
7) Lumber pulp and paper production.
8) Cultivation of edible mushrooms.

XXVII. FORESTRY MANAGEMENT

1. Objectives

To have students acquire the necessary knowledge and techniques for the measurement and appraisal of forests, and forestry management, and develop the ability and attitude to improve the forestry management.

2. Contents

1) Forests and forestry management.
2) Measurement of forests.
3) Appraisal of forests.
4) Planning of forestry management.
5) Administration of forestry management.
6) Lumber business.
7) Forestry policy, and laws and regulations concerning forestry.

XXVIII. GARDENING MATERIALS

1. Objectives

To have students understand the necessary materials,

their properties and standards for gardening, and acquire the necessary knowledge and techniques for their appropriate use.

2. Contents

1) Plant materials.

2) Stone materials.

3) Other materials.

XXIX. LANDSCAPE GARDENING WORK EXECUTION AND MANAGEMENT

1. Objectives

To have students acquire the necessary knowledge and techniques for landscape gardening work execution and management, and develop the ability and attitude for the rational landscape gardening works, the maintenance and management of landscape gardens.

2. Contents

1) Civil engineering works for landscape gardening.

2) Planting and cultivation of gardening plants.

3) Management of gardening plants and tools.

XXX. COMPREHENSIVE AGRICULTURE

1. Objectives

To have students acquire the necessary knowledge and techniques to manage agriculture comprehensively in accordance with the plan for agricultural management and the trend of agriculture in the region, and develop the ability and attitude to improve the productivity of agriculture and to strive for the development of agriculture in the region.

2. Contents

1) Agricultural management of one's home.

2) Trends of agriculture in the region.

3) Cultivation and management.

4) Raising and management.

5) Improvement of agricultural management.

6) Promotion of agriculture in the region and collective activities.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. In the courses related to Agriculture, more than five-tenths of the total number of school hours for the Subjects related to Agriculture should, in principle, be allocated to experiments and practice.

2. In teaching each Subject, due attention should be paid to the relationship with "Foundation of Agriculture".

3. In carrying out experiments and practice, due consideration should be paid to safety and sanitation by thorough guidance on the prevention of accidents caused by machines, chemicals, etc.

4. As for "Foundation of Agriculture", it should be taught as follows:

   1) In principle, it should be taught in Grade 1 of the courses related to Agriculture, and it is desirable that all the items under the Contents are taught.

   2) Effective teaching programmes should be prepared taking into account the characteristics of each course so that the students will be able to proceed to the learning of each Subject in the Specialized Education Courses without difficulties.

   3) As for 3) of the Contents, appropriate agricultural life should be selected in accordance with the characteristics of the course and the realities of community, and a series of the topic should be continuously dealt with.

   4) As for the Contents 1), 2) and 4), it is desirable to teach them in close relation with the Contents 3).

5. As for "Comprehensive Practice", it should be taught as follows:

   1) A given time should be set aside in advance for comprehensive practice, and those indicated in the teaching programme for the year may be given during the period not included in the weekly time schedule.

   2) For the practice requiring lodging, a teaching programme should be carefully prepared and due attention should be paid to the guidance of the students.

6. In case the Subjects relating to Agriculture are taught in the

General Education Course, it is desirable to select appropriate subjects from "Foundation of Agriculture", "Crops", "Vegetables", "Animal Husbandry", "Flowering Plants", etc. taking into account the realities of community and school, students' future courses, aptitude, interests, concerns, etc.

Section 10 Industry

SUB-SECTION 1 OVERALL OBJECTIVES

To make students acquire the basic and fundamental knowledge and techniques necessary in each sector of industry, understand the significance and role of industry in the modern society, and develop the ability and attitude to rationally solve various problems related to industrial technology and to promote the development of industry.

SUB-SECTION 2 SUBJECTS

I. FOUNDATION OF INDUSTRY

1. Objectives

To make students experience the basic techniques required in each sector of industry through experiments and practice, evoke their interest in and concern about techniques in each sector, develop a broad view of industry, and become aware of fundamental problems on industrial technology.

2. Contents

1) Processing and handling of materials such as treatment of various materials which accompanies changes in shapes.

2) Processing and handling of materials such as refining which accompanies changes in quality.

3) Energy as a source of power and power transformation, transmission and measurement.

4) Control such as quality control, and automation.

5) Industry and occupation.

II. PRACTICE

1. Objectives

To make students comprehensively acquire fundamental techniques relating to specialized subjects in each course through practical work, and develop the ability for application and creative work, and desirable attitudes.

2. Contents

Practice and comprehensive practice concerning the contents of specialized subjects in each course.

III. DRAWING

1. Objectives

To make students acquire comprehensively the general principles of drawing and the basic knowledge and techniques relating to drawing of specialized fields in each course, and develop the ability to accurately read and prepare production drawings, blue-prints, etc.

2. Contents

Fundamentals of drawing, and drawing and design relating to the specialized fields in each course.

IV. MATHEMATICAL SCIENCES IN TECHNOLOGY

1. Objectives

To make students develop the basic ability of mathematically and practically dealing with concrete problems in various fields of technology.

2. Contents

1) Problems in technology and mathematical expressions.

2) Computation of areas, volumes, weights, etc.

3) Treatment of numerical values such as units of measurement and errors.

4) Flow and pressures of liquid, etc.

5) Computation relating to the design of members of structures.

6) Models relating to phenomena varying with time.

7) Basic methods of predication and planning.

8) Basic computing techniques in information and control.

V. MACHINE ENGINEERING AND CONSTRUCTION

1. Objectives

To make students understand processability of machinery materials and various kinds of manufacturing, and develop the ability to plan and practise rational manufacturing and production methods.

2. Contents

1) History of machine engineering and construction.

2) Materials and processability.

3) Various engineering methods.

4) Management of production.

5) Promotion of efficiency in machine processing and production methods.

VI. MACHINE DESIGN

1. Objectives

To make students acquire the basic knowledge relating to machine design, and develop the ability for rational design of machines, tools, etc.

2. Contents

1) Machine and design.

2) Forces acting on machines.

3) Strength of mechanical materials.

4) Elements of machines and equipment.

5) Design of machines and tools.

VII. PRIME MOVERS

1. Objectives

To make students understand the structure and functions of prime movers in relation to the principles on which they are based, and develop the ability to effectively use prime movers.

2. Contents

1) Conversion of energy.

2) Fluid machinery.

3) Combustion engines.

4) Application of prime movers.

VIII. MEASUREMENT AND CONTROL

1. Objectives

To make students acquire the basic knowledge and techniques

relating to measurement and control, develop the ability to practise various measurement and to make use of automation equipment effectively.

2. Contents

1) Fundamentals of measurement.

2) Measuring instruments.

3) Measurement of industrial quantities.

4) Control.

IX. MACHINERY MATERIALS

1. Objectives

To make students understand the manufacturing method, composition, properties, etc. of major materials used in the machinery industry, and develop the ability to rationally and economically use the materials.

2. Contents

1) Metals and alloys.

2) Iron and its alloys.

3) Non-ferrous metal.

4) Non-metallic materials.

X. AUTOMOTIVE ENGINEERING

1. Objectives

To make students understand the structure and functions of automobiles in relation to the principles on which they are based, and develop the ability to effectively use such knowledge.

2. Contents

1) Man and automobiles.

2) Principles.

3) Structure.

4) Automobiles and electricity.

XI. AUTOMOBILE MAINTENANCE

1. Objectives

To make students acquire the knowledge and techniques relating to the maintenance, testing, and laws and regulations concerning automobiles, and develop the ability to effectively apply such knowledge and techniques.

2. Contents

1) Engineering and construction.
2) Maintenance and testing.
3) Maintenance factories.
4) Laws and regulations concerning automobiles.

XII. SHIPBUILDING ENGINEERING

1. Objectives

To make students acquire the basic knowledge and techniques related to shipbuilding, and develop the ability to effectively use such knowledge and techniques.

2. Contents

1) Sea and ships.
2) Principles of ships.
3) Structure of ships.
4) Ship equipment.
5) Shipbuilding plans and construction of ships.
6) Maintenance of ships.

XIII. FOUNDATION OF ELECTRICITY

1. Objectives

To make students understand the fundamental technology relating to electricity, and develop the ability to effectively use such technology.

2. Contents

1) Direct current circuits.
2) Magnetism and static electricity.
3) Alternating current circuits.

4) Electrical measurement.

5) Various wave-forms.

6) Semi-conductor elements and circuits.

XIV. ELECTRICAL TECHNOLOGY I

1. Objectives

To make students understand the fundamental technology relating to electric power, and develop the ability to use such technology.

2. Contents

1) Direct current implements.

2) Alternating current implements.

3) Generation of electricity and power transmission.

4) Power distribution and interior wiring.

5) Electrical materials.

6) Related laws and regulations.

XV. ELECTRICAL TECHNOLOGY II

1. Objectives

To make students understand the outlines of electronic technology, applied electricity and information processing, and develop the ability to put them to practical use.

2. Contents

1) Fundamentals of electronic measurement.

2) Basic electronic devices and instruments.

3) Applied electricity.

4) Control and information processing.

XVI. ELECTRONIC TECHNOLOGY I

1. Objectives

To make students understand the basic technology relating to electronics, and develop the ability to put it to practical use.

2. Contents

1) Elements of electronic circuits.

2) Fundamentals of electronic circuits.

3) Various electronic circuits.

4) Electronic measurement.

5) Various control systems.

XVII. ELECTRONIC TECHNOLOGY II

1. Objectives

To make students understand the outlines of acoustic devices and instruments, telecommunications and information technology, and develop the ability to put them to practical use.

2. Contents

1) Acoustic devices and instruments.

2) Fundamentals of telecommunications.

3) Pictorial telecommunications.

4) Fundamentals of information technology.

XVIII. AUTOMATIC CONTROL

1. Objectives

To make students understand the basic technology relating to automatic control, and develop the ability to put it to practical use.

2. Contents

1) Sequence control.

2) Feedback control.

3) Control devices and instruments.

4) Computer control.

XIX. INFORMATION TECHNOLOGY I

1. Objectives

To make students understand the basic technology relating to computer programming, and develop the ability to put it to practical use.

2. Contents

1) Fundamentals of programming.

2) Sophisticated programmes.

3) File processing.

4) Operating systems.

XX. INFORMATION TECHNOLOGY II

1. Objectives

To make students understand the outlines of the basic technology relating to computer, telecommunications, control, etc., and develop the ability to put them to practical use.

2. Contents

1) Basic technology of computer.

2) Fundamentals of data communication.

3) Fundamentals of control techniques.

4) Maintenance techniques.

XXI. INFORMATION TECHNOLOGY III

1. Objectives

To make students acquire the basic knowledge and techniques concerning programme design, and develop the ability to apply them to the development of software.

2. Contents

1) Techniques of programme design.

2) Debugging techniques.

3) Outline of software.

XXII. SYSTEMS TECHNOLOGY

1. Objectives

To make students understand the basic technology relating to systems, and develop the ability to put it to practical use.

2. Contents

1) Structure of systems.

2) Analysis of systems.

3) Systems design.

4) Models and simulation.

XXIII. INDUSTRIAL MEASUREMENT I

1. Objectives

To make students understand the basic techniques of industrial measurement in relation to its principles, and develop the ability to put them to practical use.

2. Contents

1) Elements of machines.
2) Basic dynamics.
3) Dynamics of materials.
4) Flow.
5) Fundamentals of measurement.
6) Measurement of various quantities and management of production.

XXIV. INDUSTRIAL MEASUREMENT II

1. Objectives

To make students understand the outlines of instrumentation, execusion of works, electronic technology, control, etc., and develop the ability to put them to practical use.

2. Contents

1) Electrical work.
2) Materials for instrumentation.
3) Instrumentation installation work.
4) Elements of electronic circuits.
5) Circuit technology.
6) Fundamentals of various control.

XXV. ARCHITECTURAL STRUCTURE

1. Objectives

To make students understand various forces acting on structures and the properties of various construction materials, acquire the methods of designing buildings, and develop the ability to put them to practical use.

2. Contents

1) Essentials of architectural structure.

2) Various forces acting on structures.

3) Structural materials.

4) Various types of structures.

XXVI. EXECUTION OF ARCHITECTURAL WORKS

1. Objectives

To make students understand the essentials of execusion of architectural works, acquire the basic techniques relating to construction work, and develop the ability to put them to practical use.

2. Contents

1) Essentials of the execusion of architectural works.

2) Investigation of the ground and surveys.

3) Execution methods of various types of works.

4) Machinery for construction work and electric equipment.

5) Construction business.

XXVII. ARCHITECTURAL DESIGN

1. Objectives

To make students acquire the basic knowledge and techniques relating to architectural design, and develop the ability to elaborately design buildings and to rationally design architectural structures.

2. Contents

1) Space arrangement.

2) Dynamics of each construction elements and materials.

3) Some thoughts on flexible structures.

4) Various types of structural design.

XXVIII. ARCHITECTURAL PLANNING

1. Objectives

To make students understand the fundamental elements of architectural planning, and develop the ability to rationally

plan building.

2. Contents

1) Essentials of architectural planning.

2) Style and colour of building.

3) Methods of constructing architectural plans.

4) Environment of inside and outside of buildings.

XXIX. EQUIPMENT INSTALLATION

1. Objectives

To make students acquire the fundamental knowledge and techniques relating to installation of equipment, and develop the ability to rationally install equipment.

2. Contents

1) Mechanical equipment.

2) Installation of air conditioning equipment.

3) Installation of plumbing equipment.

4) Installation of electrical equipment.

5) Installation of equipment for prevention of disasters.

6) Estimation and management of installation work.

7) Management of inspection.

8) Related laws and regulations.

XXX. AIR CONDITIONING EQUIPMENT

1. Objectives

To make students acquire the fundamental knowledge and techniques relating to air conditioning equipment, and develop the ability to put them to practical use.

2. Contents

1) Fundamentals of air conditioning.

2) Air conditioning apparatus.

3) Systems of air conditioning.

4) Direct heating devices.

5) Air conditioning devices.

6) Design for air conditioning.

XXXI. PLUMBING AND DISASTER-PROOF EQUIPMENT

1. Objectives

To make students acquire the fundamental knowledge and techniques relating to plumbing and disaster-proof equipment, and develop the ability to put them to practical use.

2. Contents

1) Water and hot water supply equipment.
2) Drainage and ventilation equipment, and sanitation devices.
3) Sewage purifier.
4) Disaster-proof equipment.

XXXII. EQUIPMENT AND FACILITY PLANNING

1. Objectives

To make students acquire the fundamental knowledge of the various phenomena concerning fluid, heat, etc., and develop the ability to rationally plan equipment and facilities.

2. Contents

1) Living environment.
2) Fundamentals of dynamics relating to fluid, heat, etc.
3) Related architectural structures.
4) Planning of equipment and facilities.
5) Related laws and regulations.

XXXIII. SURVEYING

1. Objectives

To make students acquire the fundamental knowledge and techniques relating to various types of surveying, and develop the ability to put them to practical use.

2. Contents

1) Fundamentals of surveying.
2) Plane surveying.
3) Surveying of undulations.
4) Topographical maps.
5) Photographic surveying.

XXXIV. CIVIL ENGINEERING WORK

1. Objectives

To make students acquire the fundamental knowledge and techniques of civil engineering work in relation to its principles, and develop the ability to put them to practical use.

2. Contents

1) Civil engineering materials.

2) Execution methods of engineering work.

3) Machinery for work and electrical equipment.

4) Construction estimates, and direction and management of work.

XXXV. CIVIL ENGINEERING DESIGN

1. Objectives

To make students acquire the fundamental knowledge and techniques relating to designing of civil engineering structures, and develop the ability to put them to practical use.

2. Contents

1) Civil engineering structures and force.

2) Calculation of rigid structures.

3) Strength of materials and design of the elements of structures.

4) Designing of steel and concrete structures.

5) Some thoughts on statically indeterminate structures.

XXXVI. HYDRAULICS AND NATURE OF SOIL

1. Objectives

To make students acquire the fundamental knowledge and techniques relating to technology of soil and water, and develop the ability for applying them to design and construction of structures.

2. Contents

1) Properties of hydrostatic and running water.

2) Properties of soil such as ground pressure.

3) Properties of soil containing water.

XXXVII. CIVIL ENGINEERING PLANNING

1. Objectives

To make students acquire the fundamental knowledge relating to civil engineering planning, and understand the basic idea on civil engineering planning to harmonize with natural surroundings.

2. Contents

1) Development and maintenance of national land.

2) Flood control and irrigation.

3) Cities and transportation.

4) Some thoughts on civil engineering planning.

XXXVIII. GEOTECHNOLOGY

1. Objectives

To make students acquire the fundamental knowledge and techniques concerning geotechnology, and develop the ability to apply them to various fields such as the foundation work for construction projects and the development of underground resources.

2. Contents

1) General geology.

2) Soil and rock-bed.

3) Geological surveying.

4) Disaster prevention.

5) Leveling ground and basic construction methods.

6) Development of underground resources.

XXXIX. INDUSTRIAL CHEMISTRY

1. Objectives

To make students acquire the fundamental knowledge and techniques concerning industrial chemistry, and develop the ability to put them to practical use.

2. Contents

1) Outline of chemical industry.

2) Chemical materials.

3) Elements and inorganic compounds.

4) Chemical equilibrium and reaction speed.

5) Organic compounds.

6) Radioactive matter and atomic energy.

7) Resources for chemical industry.

8) Process of chemical industry.

9) Preservation of the environment.

XL. CHEMICAL ENGINEERING

1. Objectives

To make students acquire the fundamental knowledge and techniques concerning chemical engineering, and develop the ability to apply them to chemical plant, etc.

2. Contents

1) Materials balance and energy balance.

2) Unit management and equipment.

3) Reaction devices.

4) Measurement and control.

5) Chemical plant.

XLI. EQUIPMENT AND MANAGEMENT

1. Objectives

To make students acquire comprehensively the knowledge concerning the equipment, materials, management and maintenance of the chemical industry, and develop the ability to put it to practical use.

2. Contents

1) Materials.

2) Machine and electrical equipment.

3) Management and maintenance.

4) Safety and requirements.

5) Environment preservation equipment.

XLII. SAFETY IN CHEMICAL INDUSTRY

1. Objectives

To make students acquire the fundamental techniques concerning the prevention of accidents in the chemical industry, and develop the ability to take proper measures for the prevention of accidents.

2. Contents

1) Industrial accidents and measures for the prevention of accidents.
2) Handling of dangerous materials.
3) Handling of harmful materials.
4) Safety in process and plant.
5) Related laws, regulations, and requirements.

XLIII. CHEMICAL INDUSTRY

1. Objectives

To make students deepen the understanding of specific areas in chemistry and the chemical industry, and develop the ability to put it to use in work of respective fields.

2. Contents

1) Analytical chemistry.
2) Brewing chemistry.
3) Macromolecular chemistry.
4) Radiation chemistry.
5) Electrochemistry.
6) Photochemistry.
7) Fuels.
8) Foods.
9) Paper and pulp.
10) Colouring materials and paint.
11) Pharmaceutical and agricultural chemicals.
12) Cosmetics.

XLIV. ENVIRONMENTAL TECHNOLOGY I

1. Objectives

To make students understand the foundation of environmental engineering, and develop the ability to apply it to surveys and management concerning preservation of the environment.

2. Contents

1) Essentials of environmental engineering.

2) Prevention of water and air pollution.

3) Surveys and management.

XLV. ENVIRONMENTAL TECHNOLOGY II

1. Objectives

To make students acquire the fundamental techniques concerning preservation of the environment, and develop the ability to apply them to actual surveys, tests, the operation of preservation facilities, execution of works, design, etc.

2. Contents

1) Wastes and their disposal.

2) Environment preservation facilities.

3) Reclamation of wastes.

XLVI. METAL SMELTING

1. Objectives

To make students understand the fundamentals of reaction in smelting and operations of metals, and develop the ability to apply it to the smelting of metals.

2. Contents

1) History of metal smelting.

2) Preparatory treatment of ore.

3) Fundamentals of metal smelting.

4) Metallurgical furnaces and fuels.

5) Smelting of iron and steel production.

6) Smelting of non-ferrous metals.

7) Management of production.

XLVII. METAL MATERIALS

1. Objectives

To make students understand the structure, properties and uses of metals and alloys, and develop the ability necessary for the selection and improvement of metal materials.

2. Contents

1) Crystals and structure of metals.

2) Structure and components of alloys.

3) Properties and testing of metal materials.

4) Steel and pig iron.

5) Non-ferrous metal materials and their alloys.

6) Special materials.

XLVIII. METAL PROCESSING

1. Objectives

To make students understand processing methods of metals, and develop the ability to plan and implement rational processing and production methods.

2. Contents

1) History of metal processing.

2) Various processing methods.

3) Automation in metal processing.

4) Management of production.

XLIX. CERAMIC TECHNOLOGY I

1. Objectives

To make students acquire the knowledge and techniques concerning raw materials and materials for ceramics, and develop the ability to apply them for production and the improvement of quality.

2. Contents

1) Raw materials for ceramics.

2) Fundamentals of ceramic chemistry.

3) Crystalline materials.

4) Vitreous materials.

L. CERAMIC TECHNOLOGY II

1. Objectives

To make students acquire the fundamental techniques concerning the unit operation and the measurement in production process of ceramics, and develop the ability to put them to practical use.

2. Contents

1) Treatment of raw materials and forming.

2) Heating treatment.

3) Ceramic furnaces.

4) Ceramic measurement.

LI. CERAMICS

1. Objectives

To make students acquire comprehensively techniques concerning specialized fields of the ceramics, and develop the ability to put them to practical use.

2. Contents

1) Earthenware and porcelain.

2) Glass and enamel.

3) Refractory materials

4) Cement.

5) New ceramics.

LII. TEXTILES AND TEXTILE PRODUCTS

1. Objectives

To make students acquire the fundamental knowledge and techniques concerning textiles and textile products, and develop the ability to apply them to various fields such as the production and distribution.

2. Contents

1) Fundamentals of macromolecular chemistry.
2) Textiles.
3) Yarns.
4) Cloths.
5) Secondary textile products.
6) Textile products and testing methods.

LIII. TEXTILE PRODUCT MANUFACTURING

1. Objectives

To make students acquire the fundamental knowledge and techniques concerning the manufacturing techniques of textile products and machine equipment used for production, and develop the ability to put them to practical use.

2. Contents

1) Manufacture of yarn and manufacturing machines.
2) Manufacture of cloths and manufacturing machines.
3) Manufacture of secondary textile products and manufacturing machines.
4) Dyeing of textile products.
5) Management of the manufacturing process.

LIV. TEXTILE AND DYEING DESIGN

1. Objectives

To make students acquire the fundamental knowledge and techniques concerning design necessary for the planning of textile products, and develop the ability to put them to practical use.

2. Contents

1) Fundamentals of colour and design.
2) Design of fabric and knitted goods.
3) Dyeing arts.
4) Design of cloths.
5) Design of interior decorations.
6) Planning of textile products.

LV. DYEING CHEMISTRY

1. Objectives

To make students acquire the fundamental knowledge and techniques concerning dyeing-finishing and colouring processes, and develop the ability to put them to practical use.

2. Contents

1) Basic chemistry of dyeing and colouration.
2) Chemistry of processing materials and raw materials.
3) Processing of dyeing-finishing.
4) Processing of colouring and forming.
5) Surface processing.
6) Mixing of colours, colour matching and control of colour.

LVI. INTERIOR PROCESSING

1. Objectives

To make students understand the structures of various elements composing interiors, and develop the ability to apply them to the interior design and construction.

2. Contents

1) Fundamentals of architectural structures.
2) Dynamics of structure.
3) Construction equipment.
4) Structure of interior.
5) Construction of interior.
6) Industrialization of interior.
7) Materials for interior.

LVII. INTERIOR PLANNING

1. Objectives

To make students acquire the fundamental knowledge concerning the organization of interior environments, and develop the ability to plan the interior space suited to utilization purposes.

2. Contents

1) Setting up of conditions.

2) Environmental conditions of interior.

3) Human engineering.

4) Dimensions and scales.

5) Elements of interior.

6) Planning of interior space.

LVIII. FURNITURE PRODUCTION

1. Objectives

To make students acquire the basic knowledge concerning furnitures and their production techniques, and develop the ability to put them to actual production.

2. Contents

1) Structure of furniture and fixtures.

2) Processing techniques.

3) Woodworking machines.

4) Adhesives.

5) Painting.

6) Management of production.

LIX. LUMBER CRAFT

1. Objectives

To make students understand objects of craftwork mainly using lumber in relation to traditional craft, acquire processing and finishing techniques, and develop the ability for creation and appreciation.

2. Contents

1) Traditional craft.

2) Materials.

3) Processing techniques.

4) Painting and finishing.

LX. HISTORY OF DESIGN

1. Objectives

To make students understand a history of modeling and design in relation to techniques and culture, and develop the ability for creation and appreciation.

2. Contents

1) Japanese design.
2) Western design.
3) Modern design.

LXI. DESIGN TECHNIQUES

1. Objectives

To make students acquire knowledge and techniques concerning design in various fields, and develop the ability for application and creation.

2. Contents

1) Fundamentals of design.
2) Visual design.
3) Product design.
4) Environment-structure design.
5) Design planning.
6) Craft design.

LXII. DESIGN MATERIALS

1. Objectives

To make students acquire knowledge concerning the materials used for designing and their processing, and develop the ability to select suitable materials according to utilization purposes.

2. Contents

1) Inorganic materials.
2) Organic materials.
3) Selection of materials.

LXIII. INDUSTRIAL MANAGEMENT

1. Objectives

To make students acquire the fundamental knowledge concerning the factory operation and management of production, and develop the ability to put it to practical use.

2. Contents

1) Organization and operation of companies.

2) Planning of production.

3) Control of process.

4) Control of quality.

5) Safety management.

6) Administration of personnel.

7) Cost accounting.

8) Business.

LXIV. INDUSTRIAL ENGLISH

1. Objectives

To make students acquire the basic knowledge concerning technical English necessary for the work such as production, business, management in various fields of industry.

2. Contents

Reading and writing concerning technical English required in specialized fields of each course and basic conversation.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. In the courses related to Industry, more than five-tenths of the total number of school hours for the Subjects related to Industry, as a rule, should be allocated to experiments and practice.

2. As for the Contents of each Subject, unnecessarily sophisticated matters should be avoided, and in order to enhance the effectivity of learning, it should be taught in close connection with "Practice" and "Drawing".

3. In case the special consideration is necessary to facilitate the learning in view of the realities of students, more credits may

be given to "Foundation of Industry", "Practice" or "Drawing", and proper guidance should be given during "Practice" regarding the Contents of other Subjects so that the students will be able to acquire the basic and fundamental matters.

4. In carrying out experiments and practice, the teacher should give attention to safety in facilities and equipment, thorough guidance on the prevention of accidents, and adequate consideration to safety and sanitation.

5. As for "Practice" and "Drawing", the name of each course can be added to the names of Subjects such as "Machine Practice", "Machine Drawing", etc.

6. As for "Foundation of Industry", it should be taught as follows:

1) In principle, it should be taught in Grade 1 of each course related to Industry.

2) Each Content should not be treated separately, and a task for practice which covers whole range of the Contents should be set up so that the comprehensive learning can be achieved.

3) In order to enable the students to proceed to the learning of each Subject in their respective specialized fields, an effective teaching programme should be developed taking into account the characteristics of each course.

7. As for "Mathematical Sciences in Technology", it should be taught as follows:

1) In principle, it should be taught from Grade 1 of each course related to Industry.

2) In regard to its Contents, proper attention should be given to ensure the students to acquire the basic methods for mathematical processing, and appropriate contents should be selected and taught in accordance with the need of each course.

8. As for "Prime Movers", special attention should be paid to the utilization of energy to industry and saving of energy.

9. As for "Automobile Maintenance", suitable topics should be selected for teaching safety of automobiles and preservation of the environment.

10. With regard to Subjects relating to information technology such as "Information Technology I", practice using electric computers may be effectively introduced.

11. As for "Chemical Industry" and "Ceramics", suitable contents should be selected and priorities given according to the realities of community and school.

12. With respect to "Practice" relating to chemical industry, metal industry, ceramics, textile, etc., adequate attention should be given to the processing of exhaust gas and waste fluid and, if necessary, it may be incorporated in a teaching programme.

13. In case the students in the General Education Course Study Subjects relating to Industry, it is advisable to select subjects from "Foundation of Industry", "Drawing", "Information Technology I" etc., in accordance with the realities of community and school, and the students' future courses, aptitude, interest, concern, etc.

Section 11 Business

SUB-SECTION 1 OVERALL OBJECTIVES

To have students acquire the fundamental and basic knowledge and techniques necessary for various fields of business, understand the significance and role of business in the national economy, foster the ability and attitude to rationally and practically carry out various business activities, and develop desirable aptitude as a member of the economic society.

SUB-SECTION 2 SUBJECTS

I. BUSINESS ECONOMICS I

1. Objectives

To have students understand the distribution mechanism in the national economy, and acquire the fundamental knowledge of business activities on sale and purchase.

2. Contents

1) National economy and business activities.
2) Sale and purchase.
3) Finance.
4) Physical distribution and insurance.
5) Enterprises.

II. BOOKKEEPING AND ACCOUNTING I

1. Objectives

To have students understand the basic principles of bookkeeping, and develop the fundamental ability to accurately and precisely record, calculate and arrange transaction concerning sale and purchase business.

2. Contents

1) Bookkeeping in enterprises.
2) Fundamentals of bookkeeping.
3) Entry of transactions.
4) Closing accounts.
5) Account books and slips.

III. COMPUTATION PRACTICE

1. Objectives

To have students practise the operation of abacuses and calculating machines, and develop the ability to acculately and swiftly carry out computation work necessary for business activities.

2. Contents

1) Fundamentals of calculation using abacuses and calculating machines.

2) Calculation relating to sale and purchase.

3) Calculation of interest.

4) Calculation of securities investment.

5) Calculation of operating expenses, etc.

IV. INFORMATION PROCESSING I

1. Objectives

To have students understand electronic computer and their use, and develop the basic ability for processing information through practical training.

2. Contents

1) Modern society and electronic computers.

2) Functions and components of electronic computers.

3) Data processing.

4) Fundamentals of programming.

V. COMPREHENSIVE PRACTICE

1. Objectives

To have students acquire the comprehensive knowledge and techniques of business activities through practice, and develop the ability and attitude to carry out rationally and efficiently the work necessary for business management.

2. Contents

Suitable contents should be decided based on the need of each course.

VI. MARKETING

1. Objectives

To have students acquire the general knowledge of marketing, and develop the basic ability for carrying out rationally and efficiently marketing activities.

2. Contents

1) Modern market and marketing.
2) Marketing planning and marketing research.
3) Merchandising.
4) Sale prices and marketing channels.
5) Sales promotion.
6) Practice in marketing.

VII. GOODS

1. Objectives

To have students, in the context of people's life, acquire the general knowledge of major commodities, and characteristics of goods, and deepen the understanding of the distribution of goods with foreign countries from the viewpoint of industrial economy of Japan.

2. Contents

1) Development of industrial economy and distribution of commodities.
2) Food stuffs and other goods relating to eating.
3) Clothing and other goods relating to wearing.
4) House, furniture and other goods relating to housing.
5) Export and import goods.
6) Case studies.

VIII. BOOKKEEPING AND ACCOUNTING II

1. Objectives

To have students enhance the ability of entries concerning transactions, understand the theoretical basis of enterprise accounting, and develop the ability to prepare financial statements of joint-stock companies and to utilize them.

2. Contents

1) Entry of special transactions.

2) Accounting book systems.

3) Entry of joint-stock company.

4) Fundamentals of enterprise accounting.

5) Balance sheets.

6) Profit and loss statement.

7) Analysis of financial statements.

IX. INDUSTRIAL BOOKKEEPING

1. Objectives

To have students understand the feature of bookkeeping in the manufacturing industry, acquire the basic knowledge of cost accounting, thereby develop the ability for the accurate and precise entry of transactions.

2. Contents

1) Industry bookkeeping and cost accounting.

2) Cost elements and cost accounting by elements.

3) Cost accounting by department and by product.

4) Entry of transactions.

5) Closing accounts.

X. DOCUMENTARY WORK

1. Objectives

To have students practically acquire the knowledge and techniques relating to the preparation and handling of business documents in the enterprise, and develop the basic ability for rationally and effectively processing documents.

2. Contents

1) Documentary work of the enterprise.

2) Preparation of documents.

3) Handling of documents.

4) Improvement of documentary work.

5) Case studies.

XI. INFORMATION PROCESSING II

1. Objectives

To have students acquire techniques of programming and system design through practice in electronic computers, and develop the basic ability for processing management information of the enterprise.

2. Contents

1) Management of the enterprise and information processing.
2) Programming for data processing.
3) System design for data processing.
4) Processing of management information.

XII. BUSINESS ECONOMICS II

1. Objectives

To have students understand the national economy of Japan focusing on the national income, and develop the basic ability for analyzing and understanding important trends in economy. Also, to make students acquire the fundamental knowledge of the organization and management of the enterprise, and understand the characteristics unique to the management of enterprises in Japan.

2. Contents

1) Outline of the post-war economy of Japan.
2) National income and economic growth.
3) Changes in economy.
4) Trends in the international economy.
5) Organization of enterprises.
6) Management of enterprises.
7) Characteristics of the management of enterprises in Japan.

XIII. BUSINESS LAWS AND REGULATIONS

1. Objectives

To have students acquire the fundamental knowledge of laws and regulations necessary for business activities, especially for sale and purchase transactions, and develop the ability to think and judge business phenomena for the legal point of view.

2. Contents

1) Economic life and laws.

2) Rights, duties and property rights.

3) Contracts.

4) Protection of property rights.

5) Bills and checks.

6) Joint-stock companies.

XIV. ENGLISH FOR TRADE BUSINESS

1. Objectives

To have students develop the ability of reading, understanding and writing documents in English necessary for trade transactions on the basis of the understanding of the present status of foreign trade. Also, to make students develop the basic ability of English conversation necessary for receptions and business transactions.

2. Contents

1) English documents in foreign trade.

2) Conversation in business English.

XV. COMMERCIAL DESIGN

1. Objectives

To have students acquire, through the practical design works, the fundamental knowledge and skills concerning commercial design, and develop the ability to make use of commercial design for marketing activities.

2. Contents

1) Fundamentals of design.

2) Practice in graphic design.

3) Practice in packaging design.

4) Practice in display design.

XVI. TAX ACCOUNTING

1. Objectives

To have students acquire the fundamental knowledge of the tax laws necessary for accounting in the enterprise, and develop

the ability to calculate correctly and report amount of tax, through precise entry of transactions.

2. Contents

1) Fundamentals of tax accounting.

2) Income tax.

3) Corporate income tax.

XVII. TYPEWRITING

1. Objectives

To have students learn the operation of typewriters, and develop the basic ability of preparing documents accurately and clearly using typewriters.

2. Contents

1) Types and structures of typewriters.

2) Operation of typewriters.

3) Preparation of documents.

XVIII. MATHEMATICS FOR MANAGEMENT

1. Objectives

To have students develop the fundamental ability necessary for statistical and mathematical processing of management data in the enterprise, and use it in management.

2. Contents.

1) Mathematics for management and statistics.

2) Analysis and utilization of statistics.

3) Prediction of demand.

4) Inventory control.

5) Linear programming methods.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. As for the courses relating to Business, "Comprehensive Practice" should be, in principle, taught commonly in each course. In this case, in the full time courses, it is advisable to teach it from Grade 2.

2. In each Subject, if necessary, various business machines may be utilized and due attention should be given to practical learning to enhance the effectiveness of teaching.

3. In teaching each Subject, appropriate reference may be made, if necessary, to business and economic policies, international economic situation and consumer tastes, etc. in order to arouse interest among the students and to make them understand these.

4. In carrying out experiments and practice, adequate consideration should be given especially to the guidance on safety and health.

5. In case Subjects relating to business are taught in the general course, Subjects may be selected from "Business Economics I", "Bookkeeping and Accounting I", "Computation Practice", "Information Processing I", "Documentary Work", etc. in view of the actual conditions of each region and school, student's future courses, aptitude, interest, concerns, etc.

Section 12 Fisheries

SUB-SECTION 1 OVERALL OBJECTIVES

To make students acquire the fundamental and basic knowledge and techniques concerning production in each field of fisheries, understand the significance and role of the fishery industry, and develop the ability and attitude to strive for the development of the fishery industry.

SUB-SECTION 2 SUBJECTS

I. GENERAL FISHERIES

1. Objectives

To make students acquire the fundamental knowledge and techniques relating to the sea and fishery through experimental learning, and increase their interest in the learning of the fishery industry.

2. Contents

1) Sea and organisms.
2) Fishery production.
3) Utilization of aquatic products.
4) Perspectives of the fishery industry.

II. OCEAN PRACTICE

1. Objectives

To make students familiar with the sea through experiences of swimming, boating, etc., and develop an attitude of respect for their responsibility and discipline and of doing things through mutual co-operation.

2. Contents

1) Swimming and diving.
2) Boatmanship.

III. COMPREHENSIVE PRACTICE

1. Objectives

To make students acquire the comprehensive knowledge and techniques concerning each field of fisheries and develop the ability and attitude of respecting safety and striving for the

improvement of techniques.

2. Contents

Suitable content should be selected in accordance with the requirements of each course.

IV. FISHING INDUSTRY

1. Objectives

To make students acquire the knowledge and techniques concerning the fishing industry, deepen the understanding of fishery production, and develop the ability and attitude to strive for the improvement of fishing production.

2. Contents

1) Ocean and fishery resources.
2) Fishing grounds.
3) Fishing gear and methods.
4) Machinery and implements of the fishing industry.
5) Management of fishing industry.
6) Major projects of fishing industry.

V. NAVIGATION

1. Objectives

To make students acquire the knowledge and techniques concerning navigation and navigational instruments, and develop the ability to put them to practical use in fishery production.

2. Contents

1) Geo-navigation and related instruments.
2) Celestial navigation and related instruments.
3) Electronic navigation and related instruments.
4) Automatic steering gear.

VI. FISHING BOATS OPERATION

1. Objectives

To make students acquire the knowledge and techniques

concerning the operation of fishing boats, and develop the ability to safely operate and properly maintain fishing boats.

2. Contents

1) Introduction to fishing boats.

2) Equipment of boats and their maintenance.

3) Maritime meteorology.

4) Principles of steering and operation.

5) Safety and sanitation in boats.

6) Signals.

VII. FISHERY LAWS AND REGULATIONS

1. Objectives

To make students understand the laws and regulations concerning the fishing industry and maritime affairs, and develop the ability to put them to practical use for the proper fishery production and the operation of fishing boats.

2. Contents

1) Fishery and maritime affairs administration, and laws and regulations.

2) Laws and regulations related to the fishing industry.

3) Laws and regulations related to maritime affairs.

VIII. ENGINES FOR FISHING BOATS

1. Objectives

To make students understand the structure and operation of engines of fishing boats, and develop the ability and attitude to safely and effectively operate and properly maintain engines.

2. Contents

1) Introduction to engines for fishing boats.

2) Internal combustion engines.

3) Shafting and propeller.

4) Fuels and lubricants.

5) Auxiliary machinery.

6) Boilers and refrigerating plant.

IX. MACHINERY DESIGN AND ENGINEERING

1. Objectives

To make students acquire the basic knowledge and techniques concerning the design and engineering work of machinery, and develop the ability to put them to practical use in the operation and maintenance of engines for fishing boats.

2. Contents

1) Introduction to machinery design and engineering.

2) Machine design.

3) Mechanical drawing.

4) Materials of machines.

5) Machine engineering work.

X. ELECTRIC MACHINERY FOR BOATS

1. Objectives

To make students acquire the basic knowledge concerning electricity, and develop the ability to put it to practical use for proper handling of electrical equipment for boats.

2. Contents

1) Electromagnetism and electric machinery for boats.

2) Electrical equipment for boats.

3) Electrical measurement.

4) Power distribution in boats.

5) Electronics and its application.

XI. RADIO COMMUNICATION

1. Objectives

To make students acquire communication techniques necessary for telecommunication, understand methods of communication and systems, and develop the ability and attitude to smoothly carry out communication.

2. Contents

1) Radio communication practice.

2) Operation of communication.

3) Laws and regulations related to domestic communication.

4) Laws and regulations related to international communication.

5) Communication geography.

XII. TELECOMMUNICATION THEORY

1. Objectives

To make students acquire the theories concerning electricity, electronics and radio waves, and develop the basic ability to put them to practical use.

2. Contents

1) Electricity and magnetism.

2) Electric circuits.

3) Semi-conductor devices and electron tubes.

4) Electronic circuits.

5) Pulse circuits.

6) Microwave circuits.

7) Antennas and radio waves propagation.

8) Basic measurement.

XIII. RADIO ENGINEERING

1. Objectives

To make students acquire the knowledge and techniques concerning radio engineering, and develop the ability to put them to practical use in handling electronic equipment.

2. Contents

1) Introduction to radio engineering.

2) Radio communication equipment.

3) Electronic instrument.

4) Automatic control.

5) Power source equipment.

6) Applied electronic measurement.

XIV. OUTLINE OF BOATS

1. Objectives

To make students acquire the general knowledge concerning boats, and understand the outlines of the operation and management of fishing boats.

2. Contents

1) Types of boats and their structure.
2) Equipment of boats.
3) Operation and anchorage.
4) Duties.
5) Laws and regulations related to maritime affairs.

XV. FISH FARMING

1. Objectives

To make students acquire the knowledge and techniques concerning aqua-culture and propagation, put them to practical use in fish farming, and develop the ability and attitude to strive for the improvement of productivity.

2. Contents

1) Significance and prospect of fish farming.
2) Seedling production.
3) Fish farming techniques.
4) Nutrition and feed.
5) Diseases and disorders.
6) Harvest.
7) Management and distribution.
8) Fish farming projects of major aquatic organisms.

XVI. AQUATIC ORGANISMS

1. Objectives

To make students acquire the knowledge concerning kinds and characteristics of aquatic organisms and observation techniques, and develop the basic ability necessary for production.

2. Contents

1) Classification of aquatic organisms.

2) Ecology of aquatic organisms.

3) Major aquatic organisms.

4) Plankton.

5) Fishery resources.

XVII. ENVIRONMENT OF FISHING GROUNDS

1. Objectives

To make students acquire the knowledge and survey methods concerning the environment of fishing grounds, and develop the ability to put them to practical use in fish farming.

2. Contents

1) Characteristics of the environment of fishing grounds.

2) Survey methods for fishing grounds.

3) Fish farm recreation.

4) Environmental conservation of fishing ground.

XVIII. STEERING OF BOATS

1. Objectives

To make students acquire the knowledge and techniques concerning steering of small fishing boats, and develop the ability in safe steering.

2. Contents

1) Introduction to small fishing boats.

2) Navigation.

3) Methods of steering.

4) Implements of fishing boats.

5) Laws and regulations related to maritime affairs.

XIX. FISHERY PRODUCTS PROCESSING

1. Objectives

To make students acquire the knowledge concerning fishery products processing, and develop the ability and

desire for the appropriate management of production and the improvement of productivity.

2. Contents

1) Fishery product processing and materials.

2) Principles of food preservation and processing.

3) Manufacturing of fishery products.

4) Disposal of waste water and waste matter.

5) Production control.

6) Distribution of fishery products.

XX. FISHERY FOOD CHEMISTRY

1. Objectives

To make students acquire the knowledge and techniques concerning the chemical properties and analysis of fishery foods, and develop the ability to put them to practical use in fishery product manufacturing.

2. Contents

1) Chemical properties of fishery foods.

2) Nutrition of fishery foods.

3) Chemical analysis of fishery foods.

XXI. FISHERY FOOD SANITATION

1. Objectives

To make students acquire the basic knowledge and techniques concerning fishery food sanitation, and develop the ability in sanitary management of foods.

2. Contents

1) Fishery foods and food sanitation.

2) Foods and microorganisms.

3) Inspection for microorganisms.

4) Fishery foods and diseases.

5) Sanitary control in fishery food factories.

XXII. FISHERY PRODUCT PROCESSING MACHINERY

1. Objectives

To make students acquire the basic knowledge and techniques concerning machinery necessary for fishery product processing, and develop the ability of handling them properly.

2. Contents

1) Introduction to fishery product processing machinery and food processing machinery.

2) Major machinery for fishery product processing.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. In the courses relating to Fisheries, more than five-tenths of the total number of school hours for the Subjects related to Fisheries should be, in principle, allocated to experiments and practice.

2. In carrying out experiments and practice, the teacher should give thorough guidance on safety and sanitation.

Especially, in experiments and practice in the ocean, special attention should be given to the prevention of accidents.

3. As for "General Fisheries" and "Ocean Practice", these should be taught, as a rule, in Grade 1 of each course relating to Fisheries.

4. As for "Comprehensive Practice", it should be taught as following:

1) In case 'Shipboard practice in fishing' or "Shipboard practice with engines is conducted, it should be done using training boats, but about two-tenths of the total number of school hours may be spent at practicing facilities on land.

2) 'Practice in radio communication' can be carried out through shipboard experience using training boats.

3) 'Practice in fish farming' should include the practice using small fishing boats.

4) In teaching 'Practice in fishery product processing', agricultural and livestock products may be introduced in accordance with the realities of community and school.

5. In case Subjects relating to Fisheries are taught in the full time courses, it is advisable to select suitable Subjects from "General Fisheries", "Steering of Boats", etc., taking into consideration the realities of community and school, and student's future courses, aptitude, interest, concerns, etc.

Section 13 Nursing

SUB-SECTION 1 OVERALL OBJECTIVES

To have students acquire the basic and fundamental knowledge and skills related to nursing, understand the essentials of nursing and its social significance, and develop the ability and attitude to contribute to the maintenance and improvement of the people's health.

SUB-SECTION 2 SUBJECTS

I. BASIC MEDICAL SCIENCE FOR NURSING

1. Objectives

To have students acquire the knowledge concerning the mechanism of human body, pathogenic microorganism, nutrition, drugs, and health, understand the relation between health and disease in relation to the environment, and develop the basic ability and attitude required to carry out health and medical activities.

2. Contents

1) Structure and function of human body.
2) Infection and immunity.
3) Nutrition and health.
4) Medical care and drugs.
5) Life and health.

II. FUNDAMENTALS OF NURSING

1. Objectives

To have students understand the essentials of nursing and the role of nursing in health and medical care, acquire the basic knowledge and skills of nursing related to daily life and medical care treatment, and develop the ability and attitude to appropriately carry out nursing activities.

2. Contents

1) Essentials of nursing.
2) Daily life and nursing.
3) Medical care and nursing.
4) Health and medical care system, and nursing.

III. NURSING OF ADULT PATIENTS

1. Objectives

To have students understand the ageing, life, health, and diseases in the adult age, acquire the knowledge and skills related to nursing of adults, and develop the basic ability and attitude required to carry out nursing of adults.

2. Contents

1) Health and nursing care of the adult.

2) Diseases and nursing care of the adult.

IV. NURSING OF MOTHER AND CHILD

1. Objectives

To have students understand the healthy life of mother and child and the characteristics of maternity and child health, acquire the knowledge and skills concerning pregnant women, child-birth, and care after birth and nursing of children, and develop the basic ability and attitude required to carry out maternal and child health nursing.

2. Contents

1) Health and nursing care for mother and child.

2) Nursing care for pregnant women, child-birth, and care after birth.

3) Growth and development of children and nursing.

4) Diseases and nursing care of children.

V. CLINICAL PRACTICE IN NURSING

1. Objectives

To have students develop the ability and attitude necessary for persons engaged in clinical nursing through the field experience applying and practicing the knowledge and skills acquired in each subject on nursing at the clinical situation.

2. Contents

1) Clinical practice in nursing of adults.

2) Clinical practice in nursing of mother and child.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. In the courses related to nursing, more than five-tenths of the total number of school hours for the Subjects of nursing should be allocated to practice.

2. In carrying out experiments and practice, the teacher should give thorough guidance on the prevention of accidents, and due attention should be paid to safety and sanitation. Especially in clinical practice, special attention should be paid to these points.

3. In regard to "Basic Medical Science for Nursing" it is desirable to teach it with concrete examples through practice.

4. Instruction of "Fundamentals of Nursing", "Nursing of Adult Patients", and "Nursing of Mother and Child" should be given with concrete examples by taking sufficient time for practice.

5. Instruction of "Clinical Practice in Nursing" should be given through field practice.

Section 14 Mathematical Science

SUB-SECTION 1 OVERALL OBJECTIVES

To make students deepen the systematic understanding of the fundamental concepts, principles, and laws of natural science and mathematics through the process of studying natural phenomena, and develop the ability and attitude to scientifically and mathematically think and deal with things.

SUB-SECTION 2 SUBJECTS

I. MATHEMATICS IN MATHEMATICAL SCIENCE

1. Objectives

To make students deepen the understanding of the fundamental concepts, principles, and rules of mathematics, acquire basic knowledge and master basic skills, and enhance their ability to use them correctly in the consideration of various phenomena.

2. Contents

1) Numbers and formulas.
2) Equations and inequalities.
3) Functions.
4) Geometrical figures.
5) Common logarithms.
6) Electronic computers.

3. Points for Special Consideration in Teaching

1) As for the items 1) to 4) under the Contents, they should be taught with reference to "2. Contents" and "3. Remarks about the Contents" of "Mathematics I" under the Section 3, and also it should be attempted to develop and amplify the contents of "Mathematics I" according to the necessity.

2) In regard to the item 5) under the Contents, the teacher should make the students understand the meaning and use of common logarithms, and teach the enlargement of indexes required in relation to their understanding.

3) As for the item 6) under the Contents, the teacher should enable the students to prepare computer programmes according to the capacity and functions of the available electronic computer, and to obtain the result through computer processing.

II. INTEGRATED MATHEMATICS

1. Objectives

To make students deepen their systematic understanding of the concepts, principles and laws in the fields of algebra and geometry, analysis and probability, and statistic, enhance their ability of mathematical expression and logical thinking, and develop an exploratory attitude toward and a creative ability in the study of phenomena.

2. Contents

A. Algebra and Geometry

1) Quadratic curve.
2) Vectors on a plane.
3) Matrices.
4) Space figures.

B. Analysis

1) Functions.
2) Sequences.
3) Differential calculus and its application.
4) Integral calculus and its application.

C. Probability and Statistics

1) Arrangement of data.
2) Number in cases.
3) Probability.
4) Probability distributions.
5) Population and sample.

D. Project Study

3. Points for Special Consideration in Teaching

1) Each item under the Contents should be properly distributed and taught in Grades 1 and 2.

2) As for the Contents "A.", "B.", and "C.", they should be taught with reference to the "2. Contents" and "3. Remarks about the Contents" of "III. Algebra and Geometry", "IV. Basic Analysis", "V. Integrals and Differentials" and "VI. Probability and Statistics" under the Section 3, and also it should be attempted to develop and amplify the Contents

of these Subjects according to the necessity.

3) In regard to the Contents D., the teacher should assign appropriate projects or tasks which will serve for developing and amplifying each item of the Contents "A.", "B.", and "C.", and in the process of teaching, the teacher should employ a proper method such as lecture, reading study and seminar.

III. SCIENCE IN MATHEMATICAL SCIENCE

1. Objectives

To make students study the selected themes concerning the things and phenomena in the natural environment and natural science, acquire scientific methods and understand the principles and laws through their in-depth study, and develop their ability to solve problems.

2. Contents

1) Force and energy.
2) Constitution of substances and their changes.
3) Evolution.
4) Balance of the natural world.
5) Man and nature.
6) Project study.

3. Points for Special Consideration in Teaching

1) As for the items 1) to 5) under the Contents, they should be taught with reference to the "2. Contents" and "3. Remarks about the Contents" of "I. Science I" under the Section 4, and also it should be attempted to develop and amplify the Contents of "Science I" according to the necessity.

2) In regard to item 6) under the Contents, the teacher should give more than one appropriate "Project study", pay attention so that the students acquire basic scientific methods, and also deal with the preparation of a theme report on "Project study".

IV. PHYSICS IN MATHEMATICAL SCIENCE

1. Objectives

To make students understand principles and laws systematically, and to develop the ability and positive attitude to

consider things on the basis of physics by carrying out observations, experiments, etc. on force and motion, wave motion, electricity and magnetism and atoms which are selected from among natural matters and phenomena.

2. Contents

1) Force and motion.

2) Wave motion.

3) Electricity and magnetism.

4) Atoms.

5) Project study.

3. Points for Special Consideration in Teaching

1) In the development of the structure and sequence of the teaching content, due attention should be paid so that the students form the basic concepts of physics and acquire scientific methods without any difficulty.

2) As for the items 1) to 4) under the Contents, they should be taught with reference to the "2. Contents" and "3. Remarks about the Contents" of "III. Physics" under the Section 4. In the item 3) of the Contents, experiments of electronics should also be conducted. The item 5) under the Contents should be taken up according to the necessity.

V. CHEMISTRY IN MATHEMATICAL SCIENCE

1. Objectives

To make students understand principles and laws systematically, and to develop the ability and positive attitude to consider things on the basis of chemistry by carrying out observations, experiments, etc. on the chemical properties of substances, states of substances, and chemical reactions which are selected from among natural matters and phenomena.

2. Contents

1) Chemical properties of substances.

2) States of substances.

3) Chemical reactions.

4) Structure of matter.

5) Project study.

3. Points for Special Consideration in Teaching

1) In the development of the structure and sequence of the teaching content, due attention should be paid so that the students form basic concepts of chemistry and acquire scientific methods without any difficulty.

2) As for the items 1) to 4) under the Contents, they should be taught with reference to the "2. Contents" and "3. Remarks about the Contents" of "IV. Chemistry" under the Section 4. In the items 3) of the Contents, synthesis of organic compounds should also be dealt with. The item 5) under the Contents should be taken up according to the necessity.

VI. BIOLOGY IN MATHEMATICAL SCIENCE

1. Objectives

To make students understand principles and laws systematically, and to develop the ability and positive attitude to consider things on the basis of biology by carrying out observations, experiments, etc. on the formation of a bio-organism, living bodies and energy, homeostasis and regulation, and biotic communities which are selected from among natural matter and phenomena.

2. Contents

1) Formation of bio-organisms.

2) Living bodies and energy.

3) Homeostasis and regulation.

4) Biotic communities.

5) Project study.

3. Points for Special Consideration in Teaching

1) In the development of the structure and sequence of the teaching content, due attention should be paid so that the students form the basic concepts of biology and acquire scientific methods without any difficulty.

2) As for the items 1) to 4) under the Contents, they should be taught with reference to the "2. Contents" and "3. Remarks about the Contents" of "V. Biology" under the Section 4. In the item 3) of the Contents, specificity of organic substance should also be dealt with. The item 5) under the Contents should be taken up according to the necessity.

VII. EARTH SCIENCE IN MATHEMATICAL SCIENCE

1. Objectives

To make students understand principles and laws systematically, and to develop the ability and positive attitude to consider things on the basis of earth science by carrying out observations, experiments, etc. on the structure of the earth, history of the earth, and structure of the universe, which are selected from among natural matters and phenomena.

2. Contents

1) Structure of the earth.

2) History of the earth.

3) Structure of the universe.

4) Project study.

3. Points for Special Consideration in Teaching

1) In the development of the structure and sequence of the teaching content, due attention should be paid so that the students form the basic concepts of earth science and acquire scientific methods without any difficulty.

2) As for the items 1) to 3) under the Contents, they should be taught with reference to the "2. Contents" and "3. Remarks about the Contents" of "VI. Earth Science" under the Section 4. In the item 2) of the Contents, the change of climate should also be dealt with. The item 4) under the Contents should be taken up according to the necessity.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. In preparing the teaching programme for courses related to "Mathematical Science", consideration should be given to the following:

1) "Mathematics in Mathematical Science" should be taught in Grade 1, and "Integrated Mathematics" should be taught from Grade 2 or later as a rule.

2) "Science in Mathematical Science" should be taught in Grade 1. As for the Subjects of "Physics in Mathematical Science", "Chemistry in Mathematical Science", "Biology in Mathematical Science" and "Earth Science in Mathematical Science", the students are required to study more

than two Subjects among them from Grade 2 or later as a rule.

3) In case the students study four Subjects, namely, "Physics in Mathematical Science", "Chemistry in Mathematical Science", "Biology in Mathematical Science", and "Earth Science in Mathematical Science", but do not study "Science I", some parts of the Contents of "Science I" should be added to the instruction of these Subjects in accordance with the provision prescribed in 3.-3) of the Section 3 in Chapter 1.

4) In regard to "Project study" included in the Subjects III to VII above, more than two projects in all should be taken up.

2. As for the teaching of the Contents, due consideration should be given to the following:

1) Development of an attitude of respect for life and preservation of the natural environment.

2) In conducting observation, experiments and field work, etc., the teacher should give adequate consideration to prevent accidents, and also take appropriate measures for the management and disposal of chemicals in use.

Section 15 Physical Education

SUB-SECTION 1 OVERALL OBJECTIVES

To make students acquire advanced athletic techniques through rational practice of exercise, become healthy both in mind and body, and develop their ability and attitude to contribute to the promotion and development of physical training and sports.

SUB-SECTION 2 SUBJECTS

I. THEORY OF PHYSICAL EDUCATION

1. Objectives

To have students understand the knowledge related to physical training, make good use of it for rational practice of exercise and for the improvement of their health and physical fitness, and develop the attitude to apply such knowledge to daily life.

2. Contents

1) Principles of physical training.
2) Sport-physiology and medicine.
3) Characteristics of exercise and training method.
4) Prescription of sports for physical improvement.
5) Modern life and exercise.
6) Management of physical training facilities.

II. GYMNASTICS

1. Objectives

To make students understand the characteristics of gymnastics, intend to improve their physical fitness by strengthening the function of body, and develop their ability and attitude to make use of gymnastics according to their health and physical fitness.

2. Contents

1) Exercises promoting rhythmical movement, timely movement, and quick movement.

2) Exercises promoting dynamic movement and the power to continue movement.

III. SPORTS I

1. Objectives

To make students understand the characteristics of individual sports, acquire advanced techniques and methods of refereeing these sports, and develop their ability and attitude to make full use of their individual techniques in a competition.

2. Contents

1) Gymnastic sports.
2) Athletic sports.
3) Swimming.
4) Skiing.
5) Skating.
6) *Kyudo* (Japanese Archery).

IV. SPORTS II

1. Objectives

To make students understand the characteristics of ball games, acquire advanced technique and methods of refereeing these sports, and develop their ability and attitude to make the best use of group or individual techniques in a game.

2. Contents

1) Basketball.
2) Handball.
3) Volleyball.
4) Soccer.
5) Rugby.
6) Softball.
7) Baseball.
8) Tennis.
9) Table tennis.
10) Badminton.

V. SPORTS III

1. Objectives

To make students understand the characteristics of combat sports, acquire advanced techniques and methods of refereeing these sports, and develop their ability and attitude to make the best use of combat techniques in a match.

2. Contents

1) *Judo*.
2) *Kendo*.
3) *Sumo*.
4) Wrestling.
5) *Naginata*.

VI. DANCE

1. Objectives

To make students understand the characteristics of dance, acquire advanced techniques, and develop their ability in creative expression and appreciation.

2. Contents

1) Creative dance.
2) Folk dance.

VII. OUTDOOR ACTIVITIES

1. Objectives

To make students understand the characteristics of outdoor activities through group activities utilizing nature, acquire the relevant knowledge and techniques, cultivate robust mind and body, and develop the attitude to become familiar with nature.

2. Contents

1) Camping.
2) Climbing.
3) Long-distance swimming.
4) Other outdoor activities.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. In preparing the teaching programme for courses related to Physical Education, "Theory of Physical Education", "Gymnastics", and "Outdoor Activities" should be included as a rule. In regard to "Outdoor Activities", the teacher should select and instruct more than one item listed in the Contents.

As for "Sports I", "Sports II", "Sport III", and "Dance", students should take more than one of them according to their ability and fitness, and they should be instructed more than one item listed in the Contents of each Subject.

2. With regard to "Theory of Physical Education", the teacher should teach appropriate theory and practice concerning health which is necessary in relation to exercise.

3. In teaching the Subjects from II. to VII. of the Contents above, the teacher should pay attention to safety. In addition, the teacher should give appropriate instruction on group activities with reference to the characteristics of each activity.

Section 16 Music

SUB-SECTION 1 OVERALL OBJECTIVES

To make students acquire knowledge and techniques necessary for creative music expression, enhance their ability in appreciation, and develop an attitude to contribute to the development of musical culture.

SUB-SECTION 2 SUBJECTS

I. MUSIC THEORY

1. Objectives

To make students acquire the basic knowledge and rules of music.

2. Contents

1) Musical grammar.

2) Harmony.

3) Counterpoint, various principles of the musical systems, etc.

II. HISTORY OF MUSIC

1. Objectives

To make students study history of music, and understand the cultural significance of music.

2. Contents

1) History of Western music.

2) History of Japanese music.

III. SOLFEGGIO

1. Objectives

To make students correctly comprehend various elements which construct music, and develop the basic ability for musical expression.

2. Contents

1) Music dictation.

2) Sight singing.

3) Sight performing.

IV. VOCAL MUSIC

1. Objectives

To make students acquire knowledge and techniques of vocal music, and develop the ability in musical expression.

2. Contents

1) Solo.

2) Vocal duets, trio, etc.

3) Chorus.

V. INSTRUMENTAL MUSIC

1. Objectives

To make students acquire knowledge and techniques of instrumental performance, and develop the ability in musical expression.

2. Contents

1) Performance of keyboard instruments.

2) Performance of stringed instruments.

3) Performance of wind instruments.

4) Performance of various percussion.

5) Chamber ensembles.

6) Orchestra.

VI. COMPOSITION

1. Objectives

To make students acquire knowledge and techniques of composition.

2. Contents

Techniques in composition.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. In preparing the teaching programme in courses related to music, "Music Theory", "History of Music", "Solfeggio", and 'Performance of keyboard instruments' in the Contents of "Instrumental Music" should be included. As for 'Counterpoint, various principles of the musical systems, etc.' in the Contents of "Music Theory", they should be dealt with according to the necessity.

2. In regard to Sol", "Performance of keyboard instruments', 'Performance of stringed instruments', 'Performance of wind instruments', 'Performance of various percussions' and 'Techniques in composition' in the Contents of "Vocal Music", "Instrumental Music", and "Composition", the students may choose and study either of them intensively according to their apptitude and ability.

3. Students should as a rule study either 3) under the Contents of "Vocal Music" or 6) under the Contents of "Instrumental Music". It is acceptable to regard 2) under the Contents of "Vocal Music" as a part of 3), and 5) under the Contents of "Instrumental Music" as a part of 6).

4. In the teaching of 1) under the Contents of "Instrumental Music", either piano, cembalo or organ may be chosen. In regard to 2) under the Contents, violin, viola, cello, contrabass, or harp should be used. In addition, other stringed instruments may be chosen if necessary. As for 3) under the Contents, flute, oboe, clarinet, bassoon, saxophone, French horn, trumpet, trombone, or tuba should be used. In addition, other wind instruments may be chosen if necessary.

Section 17 Art

SUB-SECTION 1 OVERALL OBJECTIVES

To make students enrich their aesthetic experiences through the learning of fine arts, develop their ability in creative expression and artistic appreciation, and also develop their attitude and ability to contribute to the advancement of the artistic culture.

SUB-SECTION 2 SUBJECTS

I. OUTLINE OF FINE ARTS

1. Objectives

To make students understand the significance of art in their life, and develop their ability in creative expression and artistic appreciation.

2. Contents

1) Fine arts and life.

2) Painting and sculpture.

3) Design and crafts.

II. HISTORY OF FINE ARTS

1. Objectives

To make students enhance their ability in artistic appreciation through the understanding of the historical changes in fine arts, thereby improving their creative ability, and develop their understanding of the significance and value of fine arts.

2. Contents

1) History of Japanese fine arts.

2) History of Oriental and Western fine arts.

III. DRAWING

1. Objectives

To make students understand shape and space as a basis of art, develop their ability in accurate observation and representation of objects, and enhance their ability in creative expression and artistic appreciation.

2. Contents

1) Expression in drawing.

2) Appreciation of works.

IV. BASIC MODELING

1. Objectives

To make students develop an artistic sense concerning the basic elements of modeling, and enhance their ability in creative ideas and structures.

2. Contents

1) Colour, shape and materials.

2) Two and three dimentional structures.

V. PAINTING

1. Objectives

To make students enhance their ability in creative expression and artistic appreciation through the teaching of Japanese painting, watercolour painting and oil painting.

2. Contents

1) Japanese painting.

2) Watercolour painting.

3) Oil painting.

VI. WOODCUT PRINTING

1. Objectives

To make students enhance their ability in creative expression and artistic appreciation through the technics of woodcut printing.

2. Contents

1) Understanding of the forms and methods of woodcut printing.

2) Expression by woodcutting.

3) Appreciation of works.

VII. SCULPTURE

1. Objectives

To make students develop their basic ability in three-

dimentional expression through the technics of sculpture and increase their ability in creative expression and artistic appreciation.

2. Contents

1) Understanding of materials and tools employed.

2) Expression by sculpture.

3) Appreciation of works.

VIII. VISUAL DESIGN

1. Objectives

To make students deepen their understanding of design through its study mainly with emphasis on the visual effects, and enhance their ability in planning and presenting a design work.

2. Contents

1) Fundamentals of design.

2) Visual design.

IX. CRAFT DESIGN

1. Objectives

To make students deepen their understanding of design through its study mainly with emphasis on the technical aspects and productivity, and enhance their ability in planning and presenting a design work.

2. Contents

1) Fundamentals of design.

2) Craft design.

3) Product design.

X. PROJECTION AND DRAFTING

1. Objectives

To make students understand the basic projection necessary for drafting, identify the relationship between objects and projection, and enhance their ability in making and reading drafts, thereby developing their ability which is useful for recognition and understanding of space.

2. Contents

1) Methods in projection.

2) Fundamentals of drafting.

3) Practice in drafting.

XI. PHOTOGRAPHIC ACTIVITY

1. Objectives

To make students develop their ability in expression through the study of photographic technics, etc., and understand the effects of pictorial messages and the artistic significance of photographic images.

2. Contents

1) Understanding of materials and equipment used and technics.

2) Planning, composition and editing.

3) Appreciation of works.

XII. COLLECTIVE MODELING

1. Objectives

To make students fully develop creative modeling ability, through co-operative activities, and develop a sense of responsibility and practical attitude.

2. Contents

1) Exhibition plan, production, display.

2) Beautification of the environment.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. In preparing the teaching programme in the courses related to fine arts, "Outline of Fine Arts", "Drawing" and "Basic Modeling" should be included as a rule.

2. With regard to "Painting", one of the items listed in the Contents can be selected.

Section 18 English

SUB-SECTION 1 OVERALL OBJECTIVES

To develop students' ability to understand English and express themselves in English, and to deepen their interest in English, and to develop the basis for international understanding.

SUB-SECTION 2 SUBJECTS

I. COMPREHENSIVE ENGLISH

1. Objectives

To further develop students' ability of hearing, speaking, reading and writing in English while grasping the outline or the main points of the matters, and develop their positive attitude of understanding English and expressing themselves in English.

2. Contents

1) Pronunciation.

2) Listening.

3) Dictation.

4) Conversation and speech.

5) Reading.

6) Writing.

3. Points for Special Consideration in Teaching

In the instruction of the Contents, consideration should be given so that harmonious balance is kept among activities of listening, speaking, hearing and writing.

II. ENGLISH COMPREHENSION

1. Objectives

To enhance students' basic ability in listening and reading English while grasping the main points of the topic, and develop their positive attitude of understanding English.

2. Contents

1) Pronunciation.

2) Listening.

3) Dictation.

4) Intensive reading.

5) Rapid reading.

6) Appreciation.

3. Points for Special Consideration in Teaching

In the instruction of the Contents, consideration should be also given to the volume of the reading materials, their level of difficulty and the reading speed.

III. ENGLISH EXPRESSION

1. Objectives

To enhance students' basic ability in speaking and writing English in order to convey the topic accurately, and develop their positive attitude of expressing in English.

2. Contents

1) Pronunciation.

2) Conversation and discussion.

3) Speech.

4) Reading aloud.

5) Drama.

6) Controlled composition.

7) Free composition.

3. Points for Special Consideration in Teaching

In the instruction of the Contents, consideration should be also given to the difference between spoken and written English, forms of expression and the speed of expression.

IV. FOREIGN AFFAIRS

1. Objectives

To deepen students' understanding of foreign affairs by means of English, and develop the basis for international understanding.

2. Contents

1) Daily life.

2) Manners and customs.

3) Geography.

4) History.

5) Other topics related to foreign affairs.

3. Points for Special Consideration in Teaching

If necessary, reference to the domestic affairs can be given and consideration should be given to the relationship with other Subject-Areas.

V. GENERAL ENGLISH

1. Objectives

To have students acquire the basic knowledge and skills of English concerned with daily life.

2. Contents

1) Reading and writing of letters and notices.

2) Comprehension of news articles.

3) English typewriting.

4) Other topics related to daily life.

VI. LANGUAGE LABORATORY PRACTICE

1. Objectives

To enhance students' ability of hearing and speaking English through the use of language laboratory, and improve their ability of reading and writing.

2. Contents

1) Pronunciation.

2) Hearing.

3) Response.

4) Dictation.

3. Points for Special Consideration in Teaching

Attention should be also paid to the instruction given before and after the practice using language laboratory.

SUB-SECTION 3 PREPARATION OF THE TEACHING PROGRAMME THROUGH THE SUBJECTS AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. In preparing the teaching programme in English course, "Comprehensive English" and "Foreign Affairs" should be included as a rule.

2. In teaching the Contents, consideration should be given to the following:

(1) As for language activities, the teacher should not be partial to any of the items.

(2) In teaching the language materials, a proper judgement should be made concerning the extent of teaching the items depending upon Subject, i.e., distinction of the items for mere understanding and those requiring to an extent of expression in addition to understanding.

(3) As for the topics for instruction, a variety of topics should be selected on the daily life, manners and customs, stories, geography, history, etc. of the people using the language concerned and of other people living in the world. The topics should be developed in the forms of exposition, dialogue, story and drama, and selection should be made from among these forms.

(4) A proper measure should be taken to meet the ability and aptitude of students by use of individualized instruction and small group instruction, or by means of an effective utilization of audio-visual aids.

CHAPTER 3 SPECIAL ACTIVITIES

I. OVERALL OBJECTIVES

Through desirable group activities, to promote harmonious development of mind and body, to develop the individuality, to enhance the self-awareness of being a member of group, and to cultivate self-reliant independent and practical attitude to enrich the school life in co-operation with others, and to cultivate an ability to fulfill oneself in the future.

II. CONTENTS

A. Homeroom

Homeroom should be organized as a basic unit of student's life in the school, and the following should be dealt with as homeroom activities.

1) Regarding the fulfillment in group life.
2) Regarding learning activities.
3) Regarding the appropriate choice and decision of future courses.
4) Regarding healthy and safe living.
5) Regarding a desirable way of life as a human being.

B. Activities of Students' Council

Students' council should be organized by all students in a school, and should carry out mainly the following activities.

1) Activities for the fulfillment and the improvement of student's life in school.
2) Activities related to the liaison and coordination of various student's activities.
3) Activities related to the co-operation with school events.

C. Activities of Clubs

Club should be in principle composed of students who share a common interest and concern, irrespective of their grades and homerooms, and should perform one of the following activities:

1) Cultural activities.

2) Physical training activities.

3) Productive activities.

D. School Events

School events should be activities conducted by the students of a whole school or particular grade, or certain group. Whenever appropriate, the following events should be performed.

1) Ceremonial events.

2) Study-related events.

3) Physical education-related events.

4) Excursion-related events.

5) Events related to health and safety.

6) Events related to work and production.

III. PREPARATION OF THE TEACHING PROGRAMME AND POINTS FOR SPECIAL CONSIDERATION IN TEACHING

1. The teacher in charge of guidance on Special Activities should be determined in accordance with the following criterion.

1) With regard to the homeroom activities, a teacher in charge of homeroom should in principle be assigned to give guidance, and in case necessary, co-operation of other teachers should be called for.

2) With regard to the activities of students' council, activities of clubs and school events, the guidance system in the school should be established and all teachers should provide proper guidance.

2. In preparing the teaching programme of Special Activities, the following items should be considered.

1) To embody each school's originality, to pay consideration to the student's stage of development and their characteristics, and to promote practical activities among students themselves under the proper guidance of the teacher. In this case, opportunities of work experience should be provided as far as possible.

2) Educational counselling (including guidance on future courses) should be properly provided in close contact with student's family.

3. In teaching the Contents, the following items should be considered:

1) The homeroom should contribute to the solution of various problems in the homeroom and to the development of a sound living attitude, by making human relations closer among students and promoting students' voluntary activities. It is necessary to ensure interrelation among five items of homeroom activities, to relate with the Social Studies, particularly with "Contemporary Society", and to contribute to the development of morality.

2) Activities of students' council and activities of clubs should promote students' voluntary and autonomous activities, and assistance should be given so that the activities are conducted by the plan developed by students themselves. Also, every student should belong to one of the clubs.

3) School events should promote students' voluntary activities according to the nature of individual events.

4) When ceremonies are held on national holidays and others, it is desirable to hoist the national flag and to make students sing the national anthem in unison, in addition to make students understand the significance of these national holidays and others.

5) The positive activities of various cultural and sports associations of students should be encouraged, paying due attention to the relations with Special Activities. Also appropriate guidance should be given when the school lunch programme is conducted as a part of Special Activities.

Supplementary Provisions

1. This Ministry Ordinance shall be enforced from 1 April, 1982. The revised Course of Study for Upper Secondary Schools shall be applied to the curriculum and the approval of completion of the whole course of the upper secondary school for the students who enroll Grade 1 of upper secondary schools on and after that day.

2. "Modern Society" among the Subject-areas/Subjects that every student must study, as described in provisions under Section 3-1. of Chapter 1, can be replaced by the two Subjects of "Ethics" and "Politics and Economy" for a while if there is a special circumstance. In this case, it is necessary to take into consideration the objectives and contents of "Modern Society".

Annexed Table (Concerned with the provisions under Section 6-3.-(1) of Chapter 1)

Areas	Courses
Agriculture	Agriculture, Horticulture, Stock-raising Life, Food Production, Agricultural Civil Engineering, Forestry, Landscape Gardening.
Industry	Machine, Electricity, Electron, Information Technology, Architecture, Equipment Industry, Civil Engineering, Chemical Industry, Metal Industry, Ceramics, Textile Engineering, Interior, Design.
Business	General Business, Accounting, Clerical Work, Information Management, Business.
Fishery	Oceanographic Fishery, Fishery Ground Resources, Fishery Product Manufacture.
Home Economics	Homemaking, Clothing, Food, Child Care.
Nursing	Health Nursing.

ANNEX Extract from the Enforcement Regulations of the School Education Law

Chapter 4 Upper Secondary School

Article 57 The upper secondary school curriculum shall be organized with the Subjects belonging to the respective Subject - areas prescribed in the Annexed Table 3 and Special Activities.

Article 57-2 In addition to the conditions specified in this Chapter, the upper secondary school curriculum shall be in conformity with the Course of Study for Upper Secondary Schools which the Minister of Education, Science and Culture makes public separately as the standard for curriculum.

Article 57-3 Where it has been recognized by the Minister of Education, Science and Culture that there is a special need for conducting research to contribute to the improvement of the upper secondary school curriculum and also adequate consideration is given for the education of students, the provisions of the preceding two Articles may be exempted in accordance with the conditions provided for separately by the Minister of Education, Science and Culture.

Article 63-2 In recognizing the completion by students of the whole course of upper secondary school, the principal of the school shall do so in respect of those who have acquired no less than eighty credits in accordance with the conditions specified in the Course of Study for Upper Secondary Schools. However, where the provisions of Article 57 and Article 57-2 concerning the curriculum of upper secondary schools are exempted under the provisions of Article 57-3, such recognition shall be made in accordance with the conditions provided for separately by the Minister of Education, Science and Culture.

Annexed Table 3 *(omitted)*

(Items on the Table are the same as those on the tables in Section 2, Chapter 1 of this Course of Study.)

Supplementary Provisions (Ministry of Education, Science and Culture Ordinance No.25 of 1 October, 1979)

1. This Ministry Ordinance shall be enforced from 1 April, 1982, except, however, that the provisions to amend Article 63-2 shall be enforced from 1 April, 1980.

2. The provisions of Article 57 and the Annexed Table 3 of the Enforcement Regulations of the School Education Law after amendment shall become applicable to the curriculum for the students who enroll Grade 1 of upper secondary schools on and after 1 April, 1982.

3. Until the provisions of Article 57 and Annexed Table 3 of the Enforcement Regulations of the School Education Law after amendment become applicable under the provisions of the preceding paragraph, the upper secondary school curriculum shall follow the previous instances.

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COURSE OF STUDY FOR
UPPER SECONDARY SCHOOLS IN JAPAN

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